

Examining the Relationship of Organizational Intelligence with Innovation Management and Career Advancement in an Organization

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Abstract

The present study aimed to examine the relationship of organizational intelligence with innovation management and career advancement in an organization. Considering its objective, this was a descriptive-correlational study. The statistical population included all high school managers in Zahedan at the year 2015. The sample contained 52 male managers and 51 female managers whom were selected through applying stratified random sampling method. To collect data, Organizational Intelligence Questionnaire, Innovation Management Inventory and Questionnaire of Career Advancement were used, the validity of which was assessed through applying the standpoint of a number of university professors and their reliability was obtained 0.74, 0.76, 0.84, respectively, using Cronbach's alpha coefficient. Results indicated that considering managers' perspectives, the status of organizational intelligence and career advancement were desirable; however, the status of innovation management was moderate. Moreover, organizational intelligence and its components were significantly and positively correlated with innovation management ($r = 0.512$, $P < 0.01$), and there was a significant and positive relationship between organizational intelligence and career advancement ($r = 0.334$, $P < 0.01$). Findings demonstrated that components of desire to change, spirit, unity and agreement, application of knowledge, performance pressure were significantly correlated to career advancement. However, components of strategic perspective and common fate were not significantly correlated with career advancement. Additionally, among the components of organizational intelligence, in the first step, application of knowledge and in the second step, desire to change were the best predictors of innovation management (which together could predict 28%). Application of knowledge was the only variable which entered the predictive model and predicted 16% of career advancement. Results of independent

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t-test indicated that no significant difference was found between male and female managers, considering their organizational intelligence, innovation management and career advancement.

Keywords

Organizational Intelligence, Innovation Management, Career Advancement

1. Introduction

Nowadays, numerous studies have discussed various types of intelligence. Intelligence mainly refers to the ability to receive, understand, and use signs and symbols and is an abstract ability. These days, intelligence is a prerequisite for many managerial concepts, representing how organizations and organizational thinkers consider the concept of intelligence and its impacts on individuals' performance in an organization. A type of intelligence is organizational intelligence. Organizational intelligence enables individuals to make organizational decisions. Organizational intelligence means having a comprehensive knowledge of all factors affecting an organization and having an in-depth knowledge about all factors including customers, competitors, economic environment, and organizational operations and processes which have strong influences on the quality of managerial decisions in an organization [1]. Excessive accumulation of knowledge is one of the main features of new organizations such that, in the last two decades, increase in the volume of information in organizations and the need to apply this knowledge in organizational decisions lead to the emergence of a phenomenon known as organizational intelligence [2]. Organizational intelligence, which is the outcome of active human intelligence and artificial intelligence, aids an organization to provide related facilities and make important and rational decisions improving the performance and efficiency of the organization. Performance of each individual in various situations indicates his/her insight and knowledge about that particular situation and/or issue. Given the fact that individual's organizational intelligence demonstrates one's awareness and knowledge of factors affecting an organization, therefore, organizational intelligence can be considered as a factor promoting an individual's performance within an organization [3]. In the current era, organizations have figured out that they will not sustain, unless they apply a strategy for their management and organizational intelligence. Moreover, they have to determine the strengths and weaknesses of their organizational intelligence through applying decision-making and planning techniques. To this end, they have to avoid any undue focus on parts of the organization which cannot have any effects on improving the organization and its future [4]. Due to its close relationship with flexibility and production, innovation can be mentioned as another important and critical issue for individuals, organizations, and all together for all communities [5]. Innovation is a process which is accompanied with organizational changes and can be regarded as an impact of high organizational intelligence, since in smart organizations, people easily accept changes and continuously seek for the best possible method for doing tasks and constantly look for methods of improving the spirit of innovation in the organization [6]. Organizational intelligence enables an organization to face today's turbulent and uncertain environments. Generally, innovation in an organization roots in organizational intelligence of that organization, since organizational intelligence indicates the capacity of the organization for being innovative [7].

The importance of organizational intelligence is due to the fact that individual intelligence alone cannot be used to overcome issues ahead; therefore, to overcome the problems, there is a need to develop collective intelligence within an organization as a necessity [8]. The most significant factors playing key roles in human development and progress in all areas are innovation and creativity. That is why innovation is considered as a key factor in the survival of an organization in the current competitive environment [9]. Increasing human life changes in various political, economic, social, and technological aspects enhance the necessity of creating new and innovative ideas, as a result of which issues related to creativity, innovation, changes in paradigms, trends, events, and images in various aspects of life should be taken more seriously into consideration. Drucker believes that any organization requires innovation. Innovation is a key factor leading to organizational growth and enhancing organizational performance. It works as an engine which allows organizations to benefit from continuous performance. In recent decades, with the dominance of the competitive culture in economic, political, social, and organizational environments, innovation is considered as a successful solution, as an integral part of the

community, and in a more micro-level of organizational environments. Therefore, companies and organizations that wish to develop or maintain their competitive advantage have to be flexible and accept changes. In this period, innovation has become organizations' main foundations [10]. In the current changing circumstances, creativity and innovation are the main conditions for survival and keys to success. The necessity of applying innovation in organizations is such that some scholars assert that lack of innovation and creativity equals to destruction of an organization in long term. The necessity and importance of creativity and innovation in organizations is due to the fact that organizations are at a point in time which is known as knowledge era, post-industrial era, information society era and creativity and innovation era. In this era, organizations prepare themselves to manage rapid changes and adapt themselves to profound worldwide alternations in a way that creativity and innovation are considered as key elements of the survival of the organization [11]. In today's organizational environment, organizations play an important role in career advancement paths systems. Management of career advancement paths, also known as organizational support aiming to develop career advancement paths, refers to programs, processes, and aids which are provided by an organization to promote and protect its employees' success in career advancement paths. Preparing the ground for promoting career advancement is a key factor which activates an organization, because when employees feel that the grounds for their growth and development are provided, they feel satisfied with their jobs and consequently their self-concept and self-esteem increase. This promotes their organizational performance [12].

Considering the fact that organizational intelligence influences innovation as well as employees and managers' job performance, addressing this issue is of great importance and aids organizations to reduce their problems. Recognizing the importance of organizational intelligence and understanding the relationship of organizational intelligence with innovation management and career advancement in an organization are important steps towards organizations' development. Therefore, the present study sought to examine this question: Is organizational intelligence related to innovation management and career advancement of high school managers of Department of Education in Zahedan?

2. Objectives

2.1. Overall Objective

To determine the relationship of organizational intelligence with innovation management and career advancement.

2.2. Special Objectives

1. To determine the status of organizational intelligence, innovation management and career advancement from the perspective of managers.
2. To determine the relationship of organizational intelligence and its components with innovation management.
3. To determine the relationship of organizational intelligence and its components with career advancement.
4. To predict innovation management by organizational intelligence components.
5. To predict career advancement by organizational intelligence components.
6. To compare male and female managers' organizational intelligence, innovation management and career advancement.

2.3. Research Questions

1. How are the status of organizational intelligence, innovation management, and career advancement from the perspective of high school managers in Zahedan?
2. Are organizational intelligence and its components significantly correlated with innovation management?
3. Are organizational intelligence and its components significantly correlated with career advancement?
4. Are the components of organizational intelligence able to predict innovation management?
5. Are the components of organizational intelligence able to predict career advancement?
6. Is there any significant difference between male and female managers' with regard to their organizational intelligence, innovation management, and career advancement?

2.4. Methods

Given the nature and objectives of the current study, *i.e.* examining the relationship of organizational intelli-

gence with innovation management and career advancement in Department of Education in Zahedan, this was a descriptive-correlational study. The statistical population included all high school managers in Zahedan (N = 141), among whom 72 individuals were male and 69 individuals were female. The sample included 103 individuals, the size of which was determined through applying Krejcie and Morgan Table (1970), among whom 52 individuals were male, 51 managers were female and 80 managers were graduate (B.A. or B.Sc.) and 32 managers were postgraduate (M.A. or M.Sc.) selected through using stratified random sampling methods.

Three questionnaires were used as measurement tools in the current study including Organizational Intelligence Questionnaire (Karl Albrecht, 2003), Innovation Management (Vivienne, 1990) adapted from Moghimi (2002), the validity of which was assessed through applying the standpoint of a number of university professors, and reliability of the questionnaires were calculated through Cronbach’s alpha coefficient.

Meanwhile we obtained the ethnical committee approval and informed consent.

The components of organizational intelligence and their Cronbach’s alpha coefficient are presented in the following table.

Results of **Table 1** show the Cronbach’s alpha coefficient for Organizational Intelligence Questionnaire and its components

This questionnaire is scored using a 5-point Likert type scale on which higher score shows desirable status.

Figures of **Table 2** indicate the scoring of organizational intelligence questionnaire.

Results of **Table 3** show the Cronbach’s alpha coefficient for Innovation Management Inventory.

Figures in **Table 4** indicate that how innovation management inventory was scored.

Result of **Table 5** shows the Cronbach’s alpha coefficient for career advancement Questionnaire

Questionnaire of Career Advancement has 8 items and is scored based on a 5-point Likert type scale which is presented in the following **Table 6**.

Table 1. Reliability of organizational intelligence questionnaire and its components.

Component	Number of questions	Reliability (Cronbach alpha)
Strategic perspective	1 - 7	0.79
Common fate	8 - 14	0.79
Desire to change	15 - 21	0.69
Spirit	22 - 28	0.81
Unity and agreement	29 - 35	0.77
Application of knowledge	26 - 42	0.86
Performance pressure	43 - 49	0.81
Organizational intelligence	49	0.84

Table 2. Scoring organizational intelligence questionnaire.

Totally disagree	Disagree	Neither agree nor disagree	Agree	Totally agree
1	2	3	4	5

Table 3. The Cronbach’s alpha coefficient for Innovation Re Management Inventory

Number of questions	Reliability (Cronbach alpha)
5	0.66

Table 4. Scoring innovation management inventory.

Yes	Somehow	No
3	2	1

Table 5. Reliability of questionnaire of career advancement.

Number of questions	Reliability (Cronbach alpha)
8	0.74

Table 6. Scoring questionnaire of career advancement.

Very important	Important	Neither important nor unimportant	Unimportant	Very unimportant
5	4	3	2	1

Note: In all three questionnaires higher score shows desirable status.

2.5. Data Analysis

To analyze the obtain data and test the hypotheses, both descriptive and inferential statistics were applied, including mean, standard deviation, one-sample t-test, Pearson correlation coefficient, regression analysis, and independent t-test. It should be noted that all these analytical analyses were conducted using SPSS.

3. Results

3.1. Research Questions

1. How are the status of organizational intelligence, innovation management, and career advancement from the perspective of managers of high schools in Zahedan?

To answer this questions, one-sample t-test was used, the results of which is presented in the following table.

Results demonstrated in **Table 7** indicate that mean and standard deviation of managers' organizational intelligence are 171.30 and 27.38, respectively. This mean is greater than the test value, *i.e.* 149, therefore, this difference is statistically significant at the 99% confidence level ($t = 8.265$, $p < 0.01$). It can be concluded that the status of managers' organizational intelligence is desirable.

Results demonstrate that mean and standard deviation of managers' innovation management are 10.25 and 2.09, respectively. This mean is slightly greater than the test value, *i.e.* 10, therefore, this difference is not statistically significant ($t = 1.226$, $p > 0.05$). It can be concluded that the status of managers' innovation management is moderate.

Results show that mean and standard deviation of managers' career advancement are 32.86 and 4.47, respectively. This mean is greater than the test value, *i.e.* 24, therefore, this difference is statistically significant ($t = 20.105$, $p < 0.01$). It can be concluded that the status of managers' career advancement is desirable.

2. Are organizational intelligence and its components significantly correlated with innovation management?

To answer this question, Pearson correlation coefficient was used, the results of which are presented in **Table 8**.

Results demonstrated in **Table 8** indicate that there is a significant and positive relationship ($r = 0.512$) between organizational intelligence and innovation management at 99% confidence level. Moreover, components of common fate ($r = 0.254$), desire to change ($r = 0.461$), spirit ($r = 0.443$), unity and agreement ($r = 0.349$), application of knowledge ($r = 0.508$), and job performance ($r = 0.428$) are significantly correlated with managers' innovation management at the 99% confidence level. However, strategic perspective is significantly and directly related to managers' innovation management at the 95% confidence level ($r = 0.247$). It can be concluded that promoting organizational intelligence and its components improves managers' innovation management.

3. Are organizational intelligence and its components significantly correlated with career advancement?

To answer this question, Pearson correlation coefficient was used, the results of which are presented in **Table 9**.

Results demonstrated in **Table 9** indicate that there is a significant and positive relationship between organizational intelligence and career advancement at 99% confidence level ($r = 0.334$). Moreover, components of spirit ($r = 0.268$), unity and agreement ($r = 0.256$), application of knowledge ($r = 0.399$), and job performance ($r = 0.270$) are significantly correlated with managers' career advancement at the 99% confidence level and desire to change ($r = 0.227$) is significantly and positively related to managers' career advancement at the 95% confidence level. However, components of strategic perspective ($r = 0.178$) and common fate ($r = 0.143$) have no

Table 7. One-sample t-test conducted to examine the status of organizational intelligence, innovation management, and career advancement of managers.

Variable	N	Mean	SD	Test value	df	t	Sig.
Organizational intelligence	103	171.30	27.38	149	102	8.265	0.000
Innovation management	103	10.25	2.09	10	102	1.226	0.223
Career advancement	103	32.86	4.47	24	102	20.105	0.000

Table 8. Results of Pearson correlation coefficient of organizational intelligence and its components with innovation management.

Variable	Organizational intelligence	Strategic perspective	Common fate	Desire to change	Spirit	Unity and agreement	Application of knowledge	Job performance
Innovation management	R	0.512	0.247	0.254	0.461	0.443	0.349	0.508
	Sig.	0.000	0.012	0.010	0.000	0.000	0.000	0.000

N = 103.

Table 9. Results of Pearson correlation coefficient of organizational intelligence and its components with career advancement.

Variable	Organizational intelligence	Strategic perspective	Common fate	Desire to change	Spirit	Unity and agreement	Application of knowledge	Job performance
Innovation management	R	0.334	0.178	0.143	0.227	0.268	0.399	0.270
	Sig.	0.001	0.072	0.149	0.021	0.006	0.009	0.006

N = 103.

significant relationship with career advancement.

4. Are the components of organizational intelligence able to predict innovation management?

To answer this question, stepwise regression analysis was used, the results of which are presented in **Table 10**.

To examine the amount of contribution of organizational intelligence components in explaining changes related to innovation management, stepwise regression analysis was used. Results of **Table 10** indicate that, in the first step, application of knowledge and in the second step, desire to change were entered into the equation. As demonstrated in the above table, in the first step, component of knowledge alone explains 25% of the variance of innovation management. However, in the second step, component of application of knowledge together with desire to change explain 28.6% of the variance of innovation management.

5. Are the components of organizational intelligence able to predict career advancement?

To answer this question, stepwise regression analysis was used, the results of which are presented in **Table 11**.

Results of stepwise regression analysis in **Table 11** indicate that among all components of organizational intelligence, only application of knowledge was entered into the equation. This component alone explains 15.1% of the variance of career advancement. However, other components are not able to predict this variable in a significant way.

6. Is there any significant difference between male and female managers' with regard to their organizational intelligence, innovation management, and career advancement?

The results of t-test in **Table 12** indicate that there is no significant difference between male and female managers considering their organizational intelligence ($t = 1.772, p > 0.05$), innovation management ($t = 1.531, p > 0.05$) and career advancement ($t = 1.777, p > 0.05$).

3.2. Discussions and Conclusions

Interpreting and discussing the results with respect to each research question is presented in the following section.

Table 10. Results of regression analysis conducted to predict innovation management based on components of organizational intelligence.

Pattern	Variables which entered into the model	R	R ²	ADJ.R ²	SE	B	β	F	Sig.
Stepwise regression	Application of knowledge	0.508	0.258	0.250	1.81	0.194	0.508	35.08	0.000
	Desire to change	0.548	0.300	0.286	1.77	0.247	0.614	21.430	0.000

Table 11. Results of regression analysis conducted to predict career advancement based on components of organizational intelligence.

Pattern	Variables which entered into the model	R	R ²	ADJ.R ²	SE	B	β	F	Sig.
Stepwise regression	Application of knowledge	0.399	0.159	0.151	4.12	0.327	0.399	19.12	0.000

Table 12. Examining the difference between male and female managers with regard to the variables under study.

Variable	Gender	N	Mean	SD	df	t	Sig.
Organizational intelligence	Female	51	176.08	26.17	101	1.772	0.079
	Male	52	166.62	27.98			
Innovation management	Female	51	10.57	2.03	101	1.531	0.129
	Male	52	9.94	2.12			
Career advancement	Female	51	33.65	4.25	101	1.777	0.079
	Male	52	32.1	4.6			

1. How are the status of organizational intelligence, innovation management, and career advancement from the perspective of managers of high schools in Zahedan?

Results of one-sample t-test demonstrated in **Table 7** indicated that considering managers' perspectives, organizational intelligence mean was higher than the moderate level; therefore, it can be inferred that with regard to managers' perspectives, the status of organizational intelligence was desirable. This finding is in line with the results of Lefter, Prejmerean, and Vasilache (2008) [13] and Bob Al-Havaieji *et al.* (2010) [14]. However, this result is not consistent with the results of the study of Faghihi and Ja'fari (2009) [15], indicating that the status of organizational intelligence of the Management and Planning Organization of Iran is lower than the moderate level.

Results of one-sample t-test showed that from the perspective of managers, innovation management mean was moderate. This indicated that the status of innovation management from managers' perspectives was not very desirable. This finding is not in line with the results of Fathizadeh *et al.* (2011) [16].

Moreover, results indicated that from managers' perspectives, career advancement mean was higher than the moderate level; therefore, it can be concluded that career advancement, from the perspective of managers, had a desirable status. This finding is consistent with the results of Hatam *et al.* (2009) [17].

2. Are organizational intelligence and its components significantly correlated with innovation management?

Results presented in **Table 8** proved that organizational intelligence and its components were significantly and positively correlated with innovation management. This finding is in line with the results of Yaghoubi and Talebizadeh (2012) [18], Fallah Shams *et al.* (2009) [19], Kafetsios (2004) [20], Carlisle and McMillan (2008) [21], and Whit (2008) [22].

3. Are organizational intelligence and its components significantly correlated with career advancement?

Results demonstrated in **Table 9** indicated that there was a significant and positive relationship between organizational intelligence and career advancement. Moreover, components of desire to change, spirit, unity and agreement, application of knowledge, and job performance were significantly correlated with managers' career advancement. However, components of strategic perspective and common fate had no significant relationship

with career advancement. This finding is in line with the results of Simic (2005) [23], Macgilchrist and Jreed (2004) [24], Lefter, Prejmerean, and Vasilache (2008) [13], Ferdousi *et al.* (2012) [25], Shams Morkani *et al.* (2014) [26].

4. Are the components of organizational intelligence able to predict innovation management?

Results of stepwise regression analysis (**Table 10**) indicated that, in the first step, application of knowledge and in the second step, desire to change were entered into the equation. In the first step, component of knowledge alone explained 25% of the variance of innovation management. However, in the second step, component of application of knowledge together with desire to change promoted the correlation coefficient by 0.548 and predicted 28.6% of the variance of innovation management.

5. Are the components of organizational intelligence able to predict career advancement?

Results of stepwise regression analysis indicated that among all components of organizational intelligence, only application of knowledge was entered into the equation. This component alone explained 15.1% of the variance of career advancement. However, other components were not able to predict this variable in a significant way.

6. Is there any significant difference between male and female managers' with regard to their organizational intelligence, innovation management, and career advancement?

Results of independent t-test (**Table 12**) demonstrated that there was no significant difference between male and female managers considering their organizational intelligence, innovation management, and career advancement.

Considering the obtained results, it can be concluded that in today's competitive world, organizations which employ talented and skilled human resources will be successful. Through controlling internal and external factors, these organizations can benefit from their human resources' talent and intelligence to achieve their organizational goals. Organizations that have high levels of organizational intelligence have considerable advantages, compared to others, in understanding organizational problems, perceiving and acquiring knowledge, organizational innovation, career advancement, and individual and organizational performance. Improving and promoting organizational intelligence can create more coordination between plans and programs, improve decision-making and innovation, improve job performance, and enhance the long-term prospects of an organization. Given the definition of organizational intelligence, it can be argued that to take advantage of human resources, measuring organizational intelligence and attempting to improve and promote it in an organization are of great importance. To perform jobs better and to improve organizational performance, having innovative managers who have high levels of organizational intelligence is essential. In this regard, managers who have higher organizational intelligence can achieve higher degrees of success. Accordingly, paying attention to organizational intelligence as a key concept affecting management and attempting to improve it in organizations can aid managers to achieve significant benefits in individual, group, and organizational level through providing appropriate grounds for improving organizational performance, organizational innovation, and organizational learning. Therefore, managers need organizational intelligence to promote organizational goals, achieve them, and improve their performance. In general, it can be stated that if the conditions for promotion of organizational intelligence are provided, organizations' innovation and career advancement will improve.

4. Recommendations

Recommendations with Regard to the Obtained Results

1. Considering the obtained results which indicate that organizational intelligence is significantly correlated with innovation management and career advancement, organizational intelligence should be considered by managers. This means that they should evaluate, periodically investigate, and reassess every single dimension of organizational intelligence in their organization. This promotes organizational intelligence subsystems which are required by the organization in order to become an organization with high organizational intelligence.

2. Encouraging and supporting employees when they do their jobs well and providing suitable and regular feedback facilities for employees and providing a fair and performance-based payment system to improve the performance of organizations are highly recommended.

3. Managers should pay great attention to factors influencing organizational innovation mentioned in this article to solve organizational problems and challenges. Moreover, analyzing and assessing factors affecting formation of innovation process in an organization should be considered. Additionally, removing barriers and

strengthening the opportunities and factors affecting creativity and innovation in an organization should be regarded.

4. Innovative recommendations and creative solutions provided to improve organizational performance should be encouraged.

5. Employees should be propelled by managers to improve their creativity and innovation.

6. Among all components of organizational intelligence, application of knowledge is the only variable which is able to predict innovation management and career advancement. Therefore, providing grounds for application of knowledge is highly recommended. When the grounds for application of knowledge are not provided, eventually the spirit of creativity and innovation in the organization will drop and organizational performance will stagnate.

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