

## Evaluating the Impact of Job Characteristics on Knowledge Creation in Khorasan Razavi General Directorate of Youth and Sports

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**Abstract:** One of the key drivers of competitive advantage is the organization ability to create and apply new knowledge. So identification and studying factors influencing the knowledge creation in is very important. The aim of this study is to evaluate the impact of job characteristics on knowledge creation. Research method is survey and applied research. The population consisted of the Khorasan Razavi General Directorate of Youth and Sports employees that are 80 employees. Random sampling was used and the sample size calculatrd 68 employees by Cochran formula. Validity was verified using SmartPLS Software. Reliability of the questionnaire was approved by using the Cronbach's alpha which is equal to 0.78. The results of Structural Equation Modelling (SEM) showed that job characteristics has a positive effect on knowledge creation.

**Key words:** Job characteristics, knowledge creation, Structural Equation Modelling (SEM), validity, Smart PLS Software

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### INTRODUCTION

There are two main objectives the organizations are following: knowledge creation and application of knowledge. Creation of knowledge is a process in which a knowledge is created by people and get strengthened and stored, formed in manner understandable and accessible for all people in all levels (Nonaka, 1994). One of the main sources of competitive advantage of the organization is its ability to create and apply new knowledge. Thus, identifying and studying the factors effective on knowledge creation is highly important for the organizations. The main source of knowledge creation are the organization's employees at all levels, so the human resource management activities is an effective means to improve knowledge creation and issues related to job design and job characteristics are relevant topics to this field.

Job characteristics refers to the type of activities, tasks, assignments and various aspects of a job. Some jobs are reasonable and current because their activities are consistent and repeated and some other are unusual; some need different skills and some have limited scope; some exhaust the employees by forcing them closely follow the procedures and some give them more freedom to do their job at will.

The employees have more freedom doing some jobs (as cited in Ebrahimpoor *et al.*, 2011). Rezaeian stated in a study on an oil refinery complex that the job characteristics can have a positive effect on knowledge creation.

So, the research question is that how much the job characteristics can be effective on knowledge creation in General Administration of Sport and Youth in Khorasan Razavi Province?

### Literature review

**Knowledge creation:** After the introduction of knowledge management in early 1900 it defined its theoretical bases in business and the science of management. The definition of knowledge is also being discussed by the doctors and scientists. The definition and measurement of knowledge management is difficult since knowledge management multidimensional, complex and process-oriented (Gorelick and Tantawy-Monsou, 2005). Knowledge management is an important tool for organizations to better manage and information and more importantly, the knowledge. Unlike other methods, knowledge management is not always easy to define, since it includes a range of concepts, management practices, technologies and activities that all fall within the scope of knowledge management (Nonaka, 1994). Flexibility and rapid response to changing environmental situations, better use of human resources and knowledge available to them as well as make better decisions are all among the achievements of knowledge management for the organizations (Mir Fakhroddini *et al.*, 2010). Through the knowledge management, the new knowledge is transferred to the employees and also the knowledge of the old employees is transferred to the new employees. Therefore, one of the ways the managers can adapt themselves with the new environments is the use

knowledge management in organizations (Abdi and AmatSenin, 2014). Nonaka (1994) defines the knowledge management as any process or act of producing, acquiring, capturing, promoting, the socialization and application of knowledge and states that everywhere the knowledge is established, the learning and performance of the organization increases. Also, Davenport and Prusak (1998) define the knowledge management as all the activities for the knowledge, and the right knowledge, be accessible to the proper people. Wiig defines the knowledge management as consisting of facts and opinions, theories and concepts, judgments and expectations.

Darroch (2005) defines a scale for comparing the behaviors and each component of knowledge management that includes three dimensions. These dimensions include knowledge acquisition, knowledge distribution and responsiveness to knowledge.

Knowledge creation includes rewarding and encouraging the employees for their innovations and new ideas, openly discussing about the organizations' experiences and failures and establishing the learning groups (Afrazeh, 2005).

**Job characteristics:** Hackman and Oldham believe that the employees to be stimulated should experience three important psychological states. The employees must know their research meaningful, feel responsible towards their research and be aware of the results of their efforts. The diversity of skills, task identity and the importance of the tasks all affect the significance of the job, freedom or independence affects the sense of responsibility associated with the job and working efficiency and the feedback affects the employees' experience of the result of their researchs.

Accordingly, the Hackman and Oldham Model consists of three aspects. The first is the main aspects of the job including diversity of skills, job content, significance of job, autonomy, feedback of results; the second is the critical psychological states that include feelings of having major research, sense of responsibility toward work, awareness of the work's results and the third is the individual and occupational results including promoting the intrinsic motivation of improving the quality of work performance, improving job satisfaction and reducing turnover (Ebrahimpoor *et al.*, 2011). Figure 1 is indicative of the relationships between the main aspects of the job, the psychological states and the results.

Then, each of the components of job characteristics will be described according to Hackman and Oldham Model.

**Diversity of the skills:** The diversity of the skills is the degree to which the job needs diverse activities whose

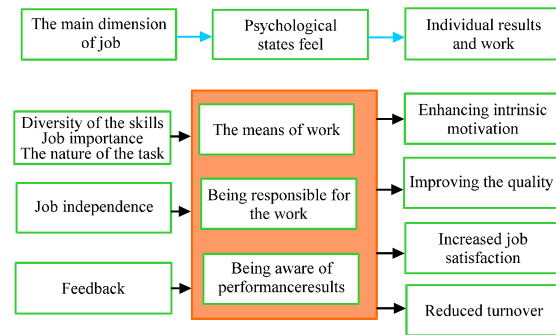


Fig. 1: The relationship between the main dimensions of the job, mental states and the (same)

requirement is having different skills and talents. Several activities needed for the accomplishment of the job and the worker or the employee must use his skills, abilities, and competencies (Ebrahimpoor *et al.*, 2011).

**Job importance:** The degree to which the individual's job affects the others' life and job. The job importance depends on the affectivity of the job on the life or job of other people in the same organization or outside of it. The job importance includes caring for the life and welfare of the colleagues and the consumers (Ebrahimpoor *et al.*, 2011). Sometimes the importance of the job and the challenging job under the semantic category which is indicative of the challenges and difficulties the employees face in carrying out their duties and involves potential abilities and creating a sense of accomplishment.

**The nature of the task:** The task identity implies the nature of the tasks, duties and responsibilities entrusted to the staff. The extent to which employees complete a job, project, unit or part of the research which is completely clear and has an identity by itself. In other words, job tasks from beginning to end have been defined in such a way that the individual has a complete picture of his duties and himself will be an considered an important part of the job (Ebrahimpoor *et al.*, 2011).

**Job independence:** The independence or freedom of activity is actually referred to the characteristic of job that grants the employees a kind of authority and supervising the decisions related to job. It seems that this freedom and choice in creating a sense of responsibility in employees has a major effect (Ebrahimpoor *et al.*, 2011).

The independence and freedom of action refers to the level to which of employees are free to schedule, plan and organize their research.

**Feedback:** The feedback is the amount or degree to which the result of an accomplished job is provided to the

individual and the information on the effectiveness of the performance is directly provided for the researcher or the employee (Ebrahimpoor *et al.*, 2011).

## MATERIALS AND METHODS

The current study is of survey-descriptive type since it collects data using a questionnaire. In terms of objective it is an applied study since it explores the backgrounds for solving a problem in the real world. The statistical population of the study included all the employees of Youth and Sports General Directorate of Khorasan Razavi (80 members). The sampling was done using simple random sampling method and according to the Cochran's formula, the minimum number of the samples was calculated as 68. The Lawson (2003) questionnaire was used for measuring the knowledge creation variable. This questionnaire is a combination of the Whig, Parich, Horvich and Armacost models which has six items that are valued based on the Likert scale. The Hackman and Oldham Questionnaire was used for evaluating job characteristics. This questionnaire examines 5 aspects of job characteristics as the nature of the task, the task importance, skill variety, independence and feedback on the results. This aspects are designed in 15 questions. There are various methods for examination of the validity among which the content validity and the three validities by Hulland (1999) as construct validity, convergent validity and divergent validity were used for this study. The content validity is created by ensure the compatibility between the measuring parameters and the existing literature. Since the questionnaire's items have been extracted from credited studies, the questionnaire was approved by the related professors in terms of content validity. The construct validity has been chosen for evaluating the accuracy and importance of the chosen indicators and it indicates that the indicators are proper factor constructs for measuring the studied constructs. Convergent validity refers to the principle that all the structural indicators have a middle correlation with each other. Divergent or discriminant validity of the questionnaire also reflects the lack of overlap between structures in connection with statements about their assessment. The Smart PLS was used in the current study in order to examine the construct, convergent and divergent validities and the results will be provided in the next section. The reliability was calculated by alpha Cronbach as 0.78 for all of the questions of the questionnaire and the reliability of the study was approved. The descriptive and inferential statistical procedures were used for data analysis. The descriptive statistics were evaluated by SPSS and the SmartPLS and Structural Equation Modeling (SEM) were used as the inferential statistics for hypotheses testing and the model fitness.

## RESULTS AND DISCUSSION

**Descriptive statistics:** Descriptive statistics on the demographic characteristics of respondents, about 69 percent are men and 27% women. In terms of age, 27.5% of respondents were <29 years old, 75.5% of respondents (the highest percentage) between the ages of 30 and 39 years old, 10% of respondents between the ages of 40-49 years and finally 1.2% of respondents were older than 50 years of age. In terms of marital status, 13% were single and 54% (highest frequency) are married. In terms of education, 6.2% of respondents had an associate degree, 47.5% (the highest percentage) of respondents had bachelor degree, 35% of respondents had a master degree, and 10% had PhD. In terms of working experience, 10% of the respondents had less than a year of researching experience, 17.5% of the respondents had between 2-3 years of working experience, 10% of the respondents had between 3-5 years of working experience, 37.5% of the respondents (highest frequency) had between 6-10 years of researching experience, 18.8% of the respondents had between 10-15 years of working experience, 2.5% of the respondents had between 15- 20 years of working experience and 1.2% of the respondents had >20 years of researching experience.

**Inferential statistics:** As was mentioned, the two-phase Hulland (1999) Model for partial least squares modeling was used for data analysis. The first phase is determining the measuring model through estimating the validity and reliability and the second phase is determining the structural model through analysis of fitness indicators, coefficients of determination and path analysis.

**The validity of measurement model:** Before structural equation modeling for testing hypotheses, it is necessary to assess the validity of research through Confirmatory Factor Analysis (CFA). In order to do this, the construct validity, convergent and divergent validity (Differential) are used. The content validity was created through ensuring the compatibility between the measuring parameters and the existing literature and it was approved by some professors and experts of the organization. The construct validity was chosen to evaluate the accuracy and importance of the selected indicators and shows whether proper factor structures indicators are provided for measuring the studied constructs. For evaluating this, the t-value was used and if it is higher than 1.96 or <-1.96, the factor constructs are appropriate for measurement with a 95% confidence level. Convergent validity refers to the principle that all the structural indicators have a middle correlation. According to Fornell and Larcker (1981), the convergent validity condition is that the Average Output Variance (AVE) is more than 5/0. The results of the construct validity and convergent validity

Table 1: The construct validity and convergent validity of the questionnaire

Variables	Subscales	Factor weight	t-statistic	Results	CR	AVE
Knowledge creation	Knowledge creation	0/832	13/612	Significant	0/803	0/65
Job characteristics	Skill variety	0/885	18/965	Significant	0/800	0/535
	The nature of the task	0/885	18/969	Significant		
	Important task	0/968	259/472	Significant		
	Independence	0/945	118/878	Significant		
	Feedback	0/998	826/346	Significant		

Table 2: The divergent validity of the research questionnaires

Variables	Knowledge management	Job features	AVE
Knowledge creation	0	1.000	0.925
Job features	1	-0.231	0.869

are shown in Table 1 which are indicative of the significance of the validities. The divergent validity is measured through comparison between the square root of AVE and correlation of the latent variables. For each of the constructs, the reflective square root of AVE should be more than the correlation of that construct with other constructs in the model. As shown in Table 2, this validity is approved for all the variables (Chou and Chen, 2009).

**The fitness of structural model:** After the evaluation and analysis of the measurement model, the structural model is examined in this section. In fact, the second phase of Hulland procedure is the use of path analysis, coefficient of determination and fitness indicator. In path analysis, the relationship between the variables flow in a direction and are considered as distinct paths. The concept of analysis, through its main feature is a path that reveals the possible causal connections between the variables (Hooman, 2005). Figure 2 shows the structural equations and the graph of the research model path and in Fig. 3, the significance of the results from the t-test is shown.

**Coefficient of determination:** The coefficient of determination is the most important criterion by which the relationship between one or several independent variables and the dependent variable can be explained. This coefficient is indicative of the percentage of changes in dependent variable by the independent variable. In Table 2, the coefficient of determination of the fitted model of the study is shown. According to this table, about 52% of the changes in organizational innovation variable is affected by the knowledge management and job characteristics variables and the rest are the factors not considered in the model.

**The model fitness indicator:** The model fitness indicators are evaluated in order to measure the model and its fitness. The initial objective of application of structural equations modeling is to find a theoretical concept

Table 3: The path coefficient and significance of job characteristics effectiveness on knowledge creation

Path	Path coefficient	t-values	Result
Job characteristics-> knowledge creation	0/721	17/514	Approved

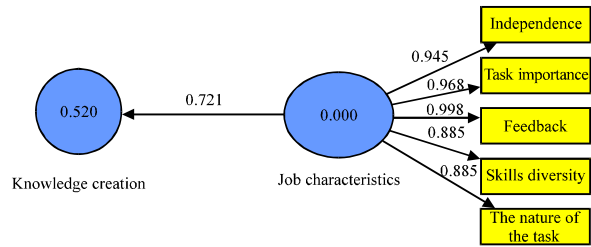


Fig. 2: Factor coefficient and path coefficient of the model

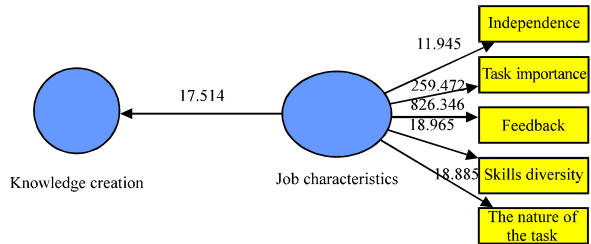


Fig. 3: The research model in coefficients significance (t-value)

statistically significant, also having applied and theoretical concept. The general criteria considered for partial least squares method is called «GoF». In case this criterion is equal to or higher than 0.5, the model is appropriate (Tenenhaus *et al.*, 2005). In the current study, the GOF value was calculated as 0.597 which is indicative of the proper fitness of the model.

**Research hypothesis testing:** The research hypothesis stated that the job characteristics affect the knowledge creation. In order to evaluate this hypothesis, the structural equations modeling was used. Figure 2 and 3 are indicative of the path coefficients and the significance levels between the research variables. In Table 3, the path's coefficients and significance levels of the job characteristics effectiveness on k knowledge creation. This effect is positive with the path coefficient of 0.721.

## CONCLUSION

The current study aimed at evaluation of the effects of the job characteristics on creation of knowledge. The most similar study to the current study is that of Rezaeian. They state that for the first time in the theoretical principles of knowledge management, the studies in the area of job design and job characteristics have been linked to knowledge creation and the job characteristics has been introduced as a prerequisite to knowledge creation. The results of the current study also indicated that the job characteristics have a positive effect on knowledge creation and the statement of Rezaeian is confirmed.

Accordingly, considering the job characteristics in job design can affect the increase in employees' motivation for knowledge creation and showing behaviors that can lead to knowledge creation. Therefore, the job designing and its components can be introduced as prerequisites to knowledge creation. So, for the studied organization by providing a proper level of skills diversity in the job and determining the job importance in accessing the organizational objectives and by giving identity to each job as well as working independence and convenient feedbacks to the employees we can take an important step toward increasing the motivation and job satisfaction level of the employees, one of most important of its results is the increase in the knowledge created by the employees.

In this regard, it is suggested the managers of Youth and Sports Organization of Khorasan Razavi Province put the promotion of knowledge creation as their priority in designing the jobs and setting the levels of job characteristics and arrange redesigning the organizational jobs with this approach.

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