

Rating Effective Factors on Motivating Employees for Job Persistence by Using Fuzzy AHP Method: A Case Study among the Employees of the Deqat Khodro Kousha (IPACO) Company

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Abstract

The goal of this research is to prioritize effective factors on motivating employees to keep on working and determining the most important effective factors on the employees' motivation. In this paper, to grade effective factors on the employees' motivation for keeping on to work, the Fuzzy AHP method, which is one of the multi-standard decision-making methods was utilized. Field research and library research methods were used for collecting the needed information. Results indicated that among the effective factors on the employees' motivation for job persistence, the health factor is the most important and financial status is the second most important factor. The least importance is given to the significance of the work for that person. In this paper, the effective factors on the employees' motivation for job persistence were rated for the first time. Results of this research are very useful in devising strategies that are related to keeping employees for the human resources' executives. The results of this paper are not applicable to all organizations. Furthermore, in this research, only the factors with positive impacts on employees for job persistence were rated.

Keywords: motivation for job persistence, person's health, financial status, work significance, social interactions, job dependency

1. Introduction

There are relatively few papers regarding the effective factors on the employees' motivation for job persistence and no model or framework has been presented in this field (Lee & Mitchell, 1994). One of the reasons for the above mentioned items can be the lack of enough knowledge about proper strategies for keeping the employees (Shacklook & Brunetto, 2008). In recent studies of the researchers, related factors for retirement were analyzed. Some of these factors have negative impacts on deciding to retire like a sense of dependency to the job or enthusiasm toward the job (Barnes et al., 2004; Patrickson & Ranzijn, 2004). There are many factors that have positive impacts on making this decision, which are attractions outside of work (Humphrey et al., 2003), excessive responsibilities (Evandrou & Glaser, 2004) and also negative factors in the working environment (Blekesaune & Solem, 2005).

Most of the recent studies are focused on effective factors in deciding to retire rather than the tendency to keep on working (Shacklook & Brunetto, 2008). In general, few researches have merged working concepts with age. Even in this field, a few quantitative researches have been done (Shacklook & Brunetto, 2008). Among the few studies that were done, the research by Shacklook and Brunetto in 2008 can be mentioned. They suggested the following factors as effective factors on the employees' tendency for job persistence (Shacklook & Brunetto, 2008):

- Health of the employee and his or her family
- Financial status
- Job dependency

- Importance of the job for the employee
- Relationships between people in the working environment
- Attractions of the environment outside of work
- Management and organization factors

With regard to the importance of skilled work forces for modern organizations, it seems that identifying effective factors on job persistence and determining the importance of each of the factors for keeping the employees and creating competitive advantages for them is necessary for every organization. Therefore, in this paper, the factors that have positive impacts on the employees' continuation of work and their positive impacts are confirmed by Shacklook and Brunetto in 2008 are rated using the AHP method and the significance of each of these factors is determined.

Managers who care about humanistic values and pursue their personnel's job satisfaction as one of their organizational goals believe that, it is possible to improve the organizations' efficacy by improving their employees' motivation (Larijani, 2006). In almost all organizations, human resources are one of the most critical resources and need utmost attention because a thoughtful employee can use his/her creativity, innovation, commitment, and faith to have a tremendous effect on the efficacy of the organization. Though most employees' capabilities are similar, some of them have better efficacy in an organization, which is the reason why there exist different levels of job satisfaction (Mansouri, 2008).

In order to improve the personnel's job efficacy and job satisfaction, one needs to identify the influential factors in creating job motivation (Bakshi et al., 2004). This can result in higher efficacy, achieving the organization's objectives, and a more energetic workplace atmosphere. Having a dynamic and healthy organization is only possible when you have a mentally and physically healthy employees (Saatchey, 1995). The human resources are the most important organizational tools which need special attention in order to be kept motivated (Bazaz, 1995).

The Analytic Hierarchy Process (AHP) is a multi-standard decision-making tool that considers quantity, quality, financial and non-financial factors (Liao, 2010). This method is a strong tool for solving complicated decision-making issues (Sevkli et al., 2007). One of the functions of this method is quantifying quality coefficients and weighting them. It seems that although multi-standard decision-making methods are suitable ways for making decisions in complicated subjects of human resources, they are less utilized in this field. Added to rating effective factors on the employees' tendency to continue working, the researcher in this paper aims to show the functions of multi-standard decision-making methods in different fields.

2. Literature Review

2.1 Effective Factors on Job Persistence

It seems that having a job and working is important for most people, even those who have enough money and can keep on living without working. Still, there are people who would rather stop working at any given chance. To some people working and living are interconnected, while to others, working and other aspects of life are completely separate from each other (Shacklook & Brunetto, 2008).

This paper determines the significance of each of the effective factors for job persistence. Here, each of these factors is explained.

Employee's health: Based on the results from previous researches regarding the decision to retire among the employees, it has become evident that the health of the employee and his family play an important role in this decision (Humphrey et al., 2003; Phillipson & Smith, 2005). Important factors of health in deciding to retire include factors that prevent the employee from doing the job in a proper way, such as physical limitations, etc. (Shacklook & Brunetto, 2008).

Financial issues: The employee's financial status includes factors such as savings, owning a house, other investments and also the expectation of the pension and health insurance (Patrickson & Ranzijn, 2004). If the financial status of the employee was suitable, the decision for retirement can be made at any age or stage for that employee. In contrast, if the financial status of the employee was not good, that employee is less likely to decide to retire (Jackson et al., 2006; Phillipson, 2004).

Job dependency: Recent studies confirm the impact of job dependency for creating tendency for job persistence (Barnes et al., 2004). Job dependency and enthusiasm often depend on the employee's job (Shacklook & Brunetto, 2008). Positive prospect of the job for the employees is a motivator that makes them continue their carrier for years to come (Ekert & Deving, 1993). Added to that, such an approach causes satisfaction from current occupation (Anderson et al., 2002).

Job importance for the employee: Recent studies have shown that the importance of the job for employees is an important coefficient that affects the employees' tendency to job persistence. Studies have confirmed the direct relationship between job importance and the employees' tendency to job persistence.

Relationships between people in the working environment: The opportunity to interact with others during work creates an attraction for employees. When people decide to leave their jobs, they lose the opportunity to interact with others (Shacklook, 2006). Social interaction at work is an important factor for keeping on to work (Choo, 1999).

2.2 Analytic Hierarchy Process Method

The AHP is a very suitable method for multi-coefficient decision-makings. This method creates a structure for determining the aspects and weights of the utilized standards (Khurrum et al., 2002). The goal in this method is to merge different coefficients for rating the options for the decision (Soner, 2008). The main characteristic in this method is the verdicts that are based on pair comparisons (Saaty, 1980).

AHP is based on the following three principles (Momeni, 2006):

- Drawing the hierarchical tree
- Devising and determining the priorities
- Logical compatibility of the verdicts

This method can be summarized in the following three stages (Momeni, 2006):

- Normalizing the pair comparisons matrix
- Calculating the arithmetic average (mean) of each line of the normalized pair comparison matrix
- Multiplying the relative weights of the coefficients by the arithmetic average of the options
- Rating the options

3. Research Methodology

This paper is developmental and practical in terms of its goal and of the research type in terms of its methodology. To collect data related to the subject's terminology, the library method using books, articles and websites was utilized. Further, to collect information, the field method of interviewing is used. The statistical group for this research consists of the office employees of the Deqat Khodro Kousha Company. This group includes 28 employees and because of the small size of the statistical group, all of the subjects were interviewed. To analyze the collected information in the present study, the AHP method in the Expert Choice software was used.

Rating the effective factors on motivating the employees to keep working in this paper is divided into the following three main stages:

- Determining effective factors on employees to continue working
- Determining coefficients that can affect the factors that were determined in stage one
- Rating the factors using the AHP method

The following diagram shows the path in the direction toward rating the effective factors on motivating the employees to continue working.

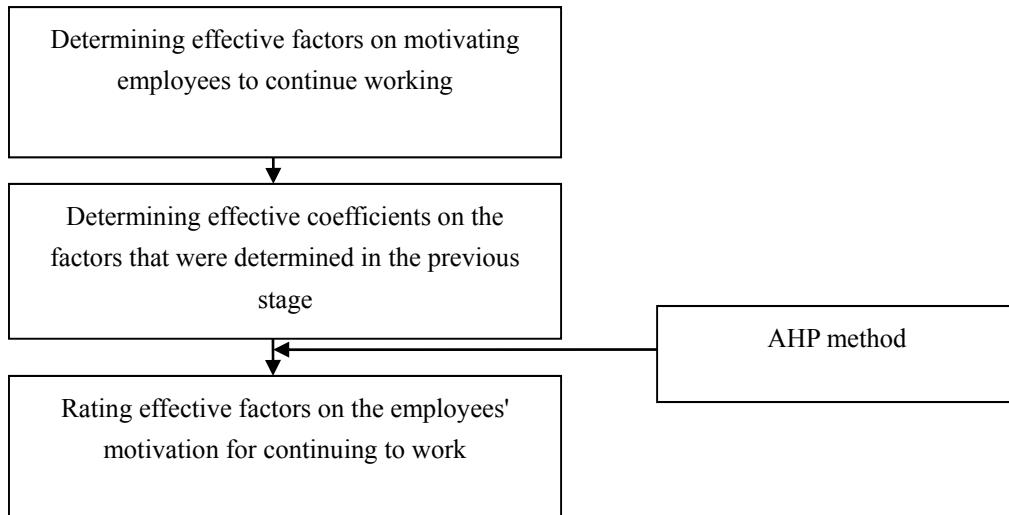


Figure 1. Diagram of the path for prioritizing effective factors on motivating the employees to continue working

To understand it better, the stages are explained, step by step:

Determining effective factors on motivating the employees to continue working

The first most important step toward rating effective factors on motivating employees to continue work is to determine the factors correctly and accurately. If these factors were to be incorrectly determined, the rating of the factors also loses its liability. Therefore, in the present paper, factors whose positive relation with the employees' motivation for job persistence has been confirmed in previous researches were utilized. These factors are explained in the research terminology section. In summary, they include:

- Employee's health
- Ill financial status
- Job dependency
- Job importance for the employee
- Social interactions in the working environment

As it was previously mentioned, positive relation between these factors and the employees' motivation for job persistence was affirmed in 2008 by Shacklook and Brunetto.

Determining effective coefficients on the factors selected in the previous stage

To rate effective factors on the employees' motivation for job persistence through the AHP method, coefficients that affect these factors must be determined. These coefficients in each employee affect these factors in a unique way. Therefore, these coefficients affect the rating of these factors. With regard to the items above, correct selection leads to accurate and precise rating.

In the study done in 2008, Shacklook and Brunetto asked the replies to determine the three factors of their age, gender and nature of job in the questionnaire and categorized them based on these three factors (Shacklook & Brunetto, 2008). In this paper, the researcher has selected these three factors as the effective factors on the selected factors in the previous stage.

Rating the factors using the AHP method

After selecting the determining factors on the employees' motivation for job persistence and selecting effective coefficients on determining them, it is time to discuss the function of the AHP method for rating these factors and determining the significance of each of them. As it was explained in the terminology section of this paper, pair comparison matrix between factors in relation with each coefficient and also pair comparison matrix between coefficients by each employee were provided. To create the final pair comparison matrix, the arithmetic average between the numbers by each employee is used. After providing the matrixes, the resulted AHP model was solved using the Expert Choice software and then, the factors were rated and the importance of each factor was determined.

Here is an example of pair comparison matrix:

$$A = [a_{ij}] = \begin{bmatrix} 1 & a_{12} & \dots & a_{1n} \\ \frac{1}{a_{12}} & 1 & \dots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ \frac{1}{a_{1n}} & \frac{1}{a_{2n}} & \dots & 1 \end{bmatrix}$$

Figure 2. Pair comparison matrix

As it was stated, pair comparisons matrixes between factors in relation with each coefficient and also between the coefficients are provided. For instance, a_{12} indicates the importance of the first factor in relation with the second factor. The importance of the coefficient of the second factor in relation with the first factor is the reverse of this number. It should be noted that the significance of each factor in relation with itself equals to 1.

4. Results and Discussion

This paper rates the effective factors on the motivation of employees for job persistence in Deqat Khodro Kousha Company. The studied company, with the commercial name IPACO was founded in 1991 in the field of manufacturing products and providing services in relation with automobiles and is currently one of the major companies that manufacture automobile parts in the country. IPACO has licenses to manufacture the following products:

- Gauge from Germany's Blaupunkt
- Gauge from France's Sagem
- Injection molding from Japan and South Korea's Denso-Poong Sung
- Fuel pipes from France's MGI
- Multifunctional monitors from Germany's Borg
- Hanks and antennas from France's Klaxon
- Harness from South Africa's ECW

In a competitive field, only the factories that present products with higher qualities to abroad markets can create competitive advantages. One of the effective factors in the stability of the product's quality is the company employee. As much as the number of employees who leave the organization or change positions is low and employees stay at their position for longer times, they will gain more skills in their job and ultimately, the great experience and high skills of the employees lead to the higher quality of the manufactured products. Therefore, executives of the Deqat Khodro Kousha Company were interested in identifying and rating the effective factors on motivating the employees for job persistence to determine their strategies in relation to human resources and keeping their employees.

In this paper, after interviewing the employees of this company (28 employee) and providing pair comparisons matrixes from the view of each of the interviewees, the final pair comparisons matrixes were provided using the arithmetic average of the resulted numbers from each matrix and finally, the provided model was solved by the Expert Choice software. Table 1 shows the weight of each of the factors in relation with each coefficient.

Table 1. Weight of each factor in relation with each coefficient

Nature of the job	Gender	Age	Factors / coefficients
0.246	0.207	0.274	Employee's health
0.285	0.126	0.194	Ill financial status
0.150	0.148	0.273	Job dependency
0.148	0.172	0.161	Job importance for the employee
0.135	0.347	0.131	Social interactions

As it can be seen in the above table, the age coefficient has the most effect on the employee's health, the gender

coefficient has the most effect on social interactions in the working environment and the coefficient of the nature of the job has the most effect on the employees' financial status.

Table 2 shows the resulted weights using the Expert Choice software:

Table 2. Weight of each coefficient

Weights	Coefficients
0.464	Age
0.275	Gender
0.261	Nature of the job

As it is shown in the table above, the coefficient with the most effect on these factors is age. Table 3 shows the final answer of the solved model. In this table, the importance of each of the effective factors on the motivation for job persistence is indicated. Based on the results, the health factor has the most effect on the employees' motivation for job persistence. The rating of factors based on their importance is shown in Table 4.

Table 3. Weight of each effective factor on the motivations of the employees to job persistence

Weight	Effective factors on the employees' motivation for job persistence
0.248	Employee's health
0.200	Ill financial status
0.190	Job dependency
0.170	Importance of the job for the employee
0.192	Social interactions

Table 4. Prioritizing effective factors on the motivation of employees for job persistence

Effective factors on the employees' motivation for job persistence	Priorities
Employee's health 0.248	First
Financial status 0.200	Second
Social interactions 0.192	Third
Job dependency 0.190	Fourth
Importance of the job for the employee 0.192	Fifth

5. Conclusion and Recommendation

This paper rated effective factors on the employees' motivation for job persistence in Deqat Khodro Kousha Company using the AHP method. Results show that the most important effective factor for employees to job persistence is their health. After that, financial status is the second most important factor and the factor of the employees' practical function is in the last level of significance in comparison with the other factors. These results can be suitable guides for devising strategies in relation with keeping and maintaining employees. Since during the process for devising strategies related to keeping and maintaining employees in any organization, attention to all effective factors on the employees' motivation is a very difficult and almost impossible task, the importance of rating and determining the priorities becomes clear. Human resources executives can pay more attention to factors with more significance when they want to devise their strategies.

In previous studies, not only effective factors on the employees' motivation for job persistence were less in attention, but also these factors were not prioritized. The present study is considered to be the first in the field of rating these factors. For this very reason, it includes some shortcomings. For instance, in this paper, only the factors with positive impacts on motivating the employees to job persistence were considered. Furthermore, the results of this paper are not applicable to other organizations and they are only valid in Deqat Khodro Kousha Company.

It is suggested to determine the importance of factors that have negative impacts on the employees' motivation to

job persistence and also focus on the organizational structure and management efficiency for enhancing the positive factors and reducing the negative factors. In this research, the factor of ill financial status was also regarded as one of the effective factors for job persistence. Although this factor has a prominent role in the employees' motivation, executives cannot use this factor for devising strategies for keeping employees because not only do the regulations regarding income and advantages have appointed a limit for minimum wage, but also the income in most organizations is regarded as a factor for attracting human resources. Therefore, it is suggested to only consider the factors that human resources executives can change to keep and maintain their employees without having a negative impact on the organization.

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