Research Article

IDENTIFYING THE FACTORS AFFECTING LABOR PRODUCTIVITY ENHANCEMENT IN AGHAJARI EXPLOITATION OF OIL AND GAS COMPANY

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ABSTRACT

This was a descriptive-surveyingand causal type research, which was performed to identify the factors affecting labor productivity enhancement of Aghajari Exploitation of Oil and Gas Company. The study population consisted of all the employees of Aghajari Exploitation of Oil and Gas Company that 663 subjects were selected by stratified random sampling techniqueto participate in the study. Data collection tool included two questionnaires, Achieve Productivity Inventory and the researcher-made questionnaire of factors affecting the productivity, which were distributed among the study subjects and then collected. The questionnaires were provided to some experts and faculty members in the field of management to assess their validity, which was verified. The reliability of the questionnaireswas also calculated by Cronbach's alpha method as 0.87 and 0.84 for the productivity inventory and the researcher-made questionnaire, respectively. Data from questionnaireswere analyzed using SPSS and LISREL software and by applying statistical descriptive- deductive methods. Research findings showed that managerial, social-psychological, cultural, environmental and individual factors have a significant impact on productivity of human resources of Aghajari Exploitation of Oil and Gas Company among which the management factors have the greatest impact.

Keywords: Productivity, Factors Affecting Productivity and Human Resources

INTRODUCTION

The most important objective of any organization management is to achieve the highest levels of organizational productivity. Efficiency or productivity is the use of different sources to produce goods and services that draw the customers' satisfaction, maximize the job satisfaction of organization's employees and increase the employees' life quality in all its dimensions. In general, productivity is a concept used to show the output to input ratio of an individual, organization unit or a nation, and it will increase when the works are done more intelligently and the resources are used better and more efficiently; however, it does not necessarily mean to work harder or longer. Therefore, an organization's productivity increases in conditions that the attitude of the organization management would be in line with the realities of the field in relation to human factors of productivity (Saatchi, 2004).

Productivity is based on the belief that the man is able to accomplish his works and tasks each day better than the day before. In addition, productivity requires that continuous efforts are made to learn new theories and methods. The main topic of productivity is quality and its improvement. Thus, regarding productivity, no decision should overlook the output quality, since the quality of production and providing serviceswill free the personnel from duplication, and meanwhile preventingthe stress in the workplace, can help the organization in increasing the performance (HamidiPuor, 1995).

Chris Argyris, Warren Beatti and Rensis Liker argued that to achieve the commitment of employees at work, their job satisfaction and productivity and their participation in decision-making are vital and fundamental. Belcher believes that productivity challenge requires a thoughtful and quick respond. Stuf and Griffin (1991) in a research allowed the organization's employees to re-design their work and have more participation in decision-making process in this regard. The research results indicated increased productivity rates and decreased production costs as well as added customers (Saatchi, 2007). Therefore, in this study, the productivity of human resources and the factors affecting it were examined.

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Research Hypotheses

- 1. Managerial factors have a significant impact on enhancement of human resources productivity.
- 2. Social psychological factors have a significant impact on enhancement of human resources productivity.
- 3. Cultural factors have a significant impact on enhancement of human resources productivity.
- 4. Environmental factors have a significant impact on enhancement of human resources productivity.
- 5. Individual factors have a significant impact on enhancement of human resources productivity.

Productivity

Productivity is a concept used to show the output ratio of an individual, unit and an organization; the higher productivity of an organization, the lower unit labor costs will be.In today's super competitive world, to increase the productivity of our workplace organization productivity, we need to have more production with less manpower, less investment, less time, less space and in general, with fewer resources. The productivity of an organization depends more than any other factor on its staff knowledge, skills, abilities, attitudes and behaviors. There is a positive correlation between two factors of productivity and quality of work, and to better understand the concept of productivity, weneed to become familiar with the definition of quality of work. Quality includes aspects of goods and services that can meet the consumer's needs and the provider's income. The important point is that the quality of a product should be at the highest level and its price needs to be at the lowest possible level (Saatchi, 2000).

Measuring Productivity

Productivity is a criterion for measuring performances and evaluates the relationship between inputs (i.e. what we use in the production process) and output or production (i.e. those we obtain). The inputs include machinery, materials, tools, human resources, capital, land, energy, management, time and the like. The outputs include goods and services. Since the resources (inputs) are limited, thus, they should be used optimally by implementing productivity management. Workers and employees, producers, consumers and in other words, and all the nation and the state will benefit from higher productivity. As mentioned in the previous chapter, the cycle of productivity management consists of four steps.

- A. Measurement and assessment of productivity
- B. Evaluation of productivity
- C. Planning for productivity improvement
- D. Improvement of productivity

Any organization, at the stage of measuring productivity, depending on its type of activity, including producing or providing services, selects a number of indicators in accordance with the organization's operations, and will assess each of its whole collection and units based on their analysis. In the next stage, planning, the acceptable levels of productivity index (objectives) in the next period associated with strategies to achieve them will be determined. Finally, in the fourth stage, the productivity improvement process can be adopted according to various methods so that in the next round of productivity management cycle, the overall productivity index will show the tendency toward improvement compared to the past (Taheri, 2000).

Productivity Indices

Productivity indices are often used to measure the progress and success of organizations and determine their strengths and weaknesses. Calculating these indices, especially in service providing organizations, which produce services or non-tangible products is very difficult. The analysis of productivity indices revealsthe possibilities and opportunities for improving the organization productivity. Nowadays, measuring productivity is of great importance even in public services issues, financial institutions and banks, transportation institutions and communication companies, utilities such as water, electricity, gas, health and education. Usually in service providing organizations, other indicators are used to measure productivity such as number of employees, number of customers, money value of the lost sales, number of customers' complaints, etc. Although the above indicesdo not show the output to used inputs ratio by them, however, they can help in evaluating the organizations'performance. Productivity measurement

helps to detect non-economic activities, the amount of waste, loss and lavish and determine the unused capacities and assists in planning for optimal resources allocation (ibid., 111).

Employees' motivation and productivity of human resources

To achieve an appropriate and effective local solution, we need to fully consider the local conditions and circumstances of each organization for developing and implementing the motivational programs; without consideration of employees' expectations and demands, the managers' views and the organization's conditions, achieving such a solution would not be possible. It is better that the assessment, detection, planning and implementation of such sensitive and challenging programs are performed by theoretical and practical experts and elites. Individual incentive and encouraging micro-systems cannot be useful and effective. In this context, it is better to use all management systems, including payments, awards, encouragements and punishments in a single and integrated system to achieve a positive synergism. Finally, good strategic and operational plans need proper and correct implementation, and to this end, informed ,faithful and enthusiastic executers should be , trained (Ansari, 1997).

Work culture and its role in productivity

Man is considered as the most important factor in economic-industrial development and plays akey and pivotal role in enhancing the productivity of organizations. Since, only the man can enhance the quality and quantity of work, provide new plans, increase his work power and find the ways to reduce the costs. On the other hand, humans are not only the factor but also the goal of productivity. Obviously, human development and productivity lies in ruling of unifying principles on all social foundations, the principlesconsistent with the whole universe and human nature, and this can occur only in the light of God-centered thinking. Today, productivity is known as a function of seven variablesas follows:

- 1. The ability or readiness to work
- 2. Understanding the job
- 3. Organizational support
- 4. Motivation or desire
- 5. Performance feedback
- 6. Credibility
- 7. Environmental compatibility

Regarding motivation, the research shows that the employees tend todo the things that they can successfully handle and motivate them or bring them mental peace. Performance feedback means informal providing of individual daily performance to him. In this method, high positive or negative performances can be formally documented (Afrareh, 1997).

The labor productivity in this research was measured based on Achieve model. In this model, the productivity consists of dimensions, including ability, clarity, support, motivation, evaluation, reliability and the environment. The factors examined as effective ones on the productivity of labor in this study include management factors, social - psychological factors, environmental factors, individual factors and cultural factors. These factors affect the productivity and its dimensions, and can reduce or increase them.

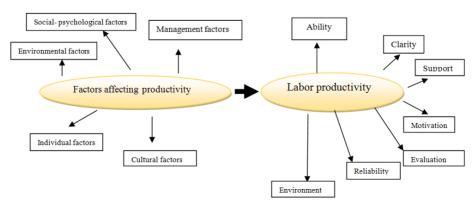


Figure 1: Research Casual Model

MATERIALS AND METHODS

Based on the objective and in terms of methodology, this study was an applied and descriptive-surveying one respectively, and a causal type. Since the data needed for research was collected through questionnaire, it is also considered as surveying study. The variables examined in this study included labor productivity as the dependent variable and management, social - psychological, cultural, environmental and individual factors as the independent variables.

The study population consisted of all employees of Aghajari Exploitation of Oil and Gas Company that among them, a number was selected and participated in the study. According to the information acquired from Aghajari Exploitation of Oil and Gas Company, the number formal employees of the company accounted for 2000, and the contracted employees were 3,000 people.

In this study, a stratified random sampling method was used, and the sample size was determined based on Krejcie and Morgan formula. According to Krejcie and Morgan formula, 322 subjects of the official staffand 341 subjects of the contract employees were participated in the study.

To collect the data needed, a researcher-made questionnaire including demographic and individual informationand components of management, social - psychological, cultural, environmental and individual factors was used. Also, the Achieve Productivity Inventory was used to assess the employees' productivity of Aghajari Exploitation of Oil and Gas Company. The questionnaire has been provided by Hersey, Blanchard and Goldsmith (1983) and has seven components of ability, clarity, support, motivation, evaluation, reliability and the environment. For interpretation of results, if the calculated score is between 128 and 160, the employee productivity is very high. If the calculated score is between 96 and 127, the employee productivity is high. The scores between 64 and 95 represent typical productivity, and the scores between 32 and 63 indicatelow productivity (ShabaniBahar, 2011).

The reliability of the study questionnaireswas calculated using Cronbach's alpha method. The acquired scores in this test for productivity questionnaire and the researcher-made questionnaire were as 0.87 and 0.84, respectively. The Cronbach's alpha scores for components of productivity and factors affecting productivity are as follows:

- Ability: 0.82; Understanding: 0.82; Motivation: 0.82; Organizational support: 0.83; Feedback: 0.79; Reliability and compatibility: 0.81.
- Management factors: 0.84; Social Psychological factors: 0.82; Cultural factors: 0.78; Environmental factors: 0.81; Individual factors: 0.82.

The study data were analyzed after collection using SPSS and Lisrel software. Appropriate deductive statistical methodssuch as Spearman correlation coefficient, regression and structural equation modeling were used for assessing the validity of hypotheses.

RESULTS AND DISCUSSION

Hypothesis 1

• Managerial factors have a significant impact on enhancement of human resources productivity of Aghajari Exploitation of Oil and Gas Company.

$$\begin{cases}
H_0: \mu_e = \mu_r \\
H_1: \mu_e \neq \mu_r
\end{cases}$$

Table 1: The effect of managerial factors on criterion variable of human resources productivity enhancement

Result	Significance number(t-value)	Impact coefficient (β)	Direct path	
Hypothesis confirmation	8.69	0.44	managerial factors → enhancement of human resources productivity	

Due to the impact factor of $\beta = 0.44$ and the critical value of t coefficient = 80.69 (-1.96 > t > 1.96) reported in Table 1, which is larger than 1.96, the predicting variable of managerial factors can affect the criterion variable of managerial factors and explain it. As a result, this hypothesis is confirmed by 0.95 of confidence and the conflicting claim will be rejected.

Hypothesis 2

• Social - psychological factors have a significant impact on enhancement of human resources productivity of Aghajari Exploitation of Oil and Gas Company.

Table 2: The effect of social - psychological factors on criterion variable of human resources productivity enhancement

Result	Significance number(t-value)	Impact coefficient (β)	Direct path	
Hypothesis confirmation	6.54	0.35	social - enhancement productivity	psychological factors of human resources

Due to the impact factor of β = 0.35 and the critical value of t coefficient = 6.54 (-1.96 > t > 1.96) reported in Table 2, which is larger than 1.96, the predicting variable of social - psychological factors can affect the criterion variable of managerial factors and explain it. As a result, this hypothesis is confirmed by 0.95 of confidence and the conflicting claim will be rejected.

Hypothesis 3

• Cultural factors have a significant impact on enhancement of human resources productivity of Aghajari Exploitation of Oil and Gas Company.

Table 3: The effect of cultural factors on criterion variable of human resources productivity enhancement

Result	Significance number(t-value)	Impact coefficient (β)	Direct path	
Hypothesis confirmation	5.89	0.27	cultural factors → enhancement of human resources productivity	
Comminution			naman resources productivity	

Due to the impact factor of β = 0.27 and the critical value of t coefficient = 5.89 (-1.96 > t > 1.96) reported in Table 2, which is larger than 1.96, the predicting variable of cultural factors can affect the criterion variable of managerial factors and explain it. As a result, this hypothesis is confirmed by 0.95 of confidence and the conflicting claim will be rejected.

Hypothesis 4

• Environmental factors have a significant impact on enhancement of human resources productivity of Aghajari Exploitation of Oil and Gas Company.

$$\begin{cases}
H_0: \mu_e = \mu_r \\
H_1: \mu_e \neq \mu_r
\end{cases}$$

Table 4: The effect of environmental factors on criterion variable of human resources productivity enhancement

Result	Significance number(t-value)	Impact coefficient (β)	Direct path
Hypothesis confirmation	7.70	0.39	environmental factors → enhancement of human resources productivity

Due to the impact factor of β = 0.39 and the critical value of t coefficient = 7.70 (-1.96 > t > 1.96) reported in Table 2, which is larger than 1.96, the predicting variable of environmental factors can affect the criterion variable of managerial factors and explain it. As a result, this hypothesis is confirmed by 0.95 of confidence and the conflicting claim will be rejected.

Hypothesis 5

• Individual factors have a significant impact on enhancement of human resources productivity of Aghajari Exploitation of Oil and Gas Company.

Table 5: The effect of individual factors on criterion variable of human resources productivity enhancement

Result	Significance number(t-value)	Impact coefficient (β)	Direct path
Hypothesis confirmation	6.28	0.31	individual factors → enhancement of human resources productivity

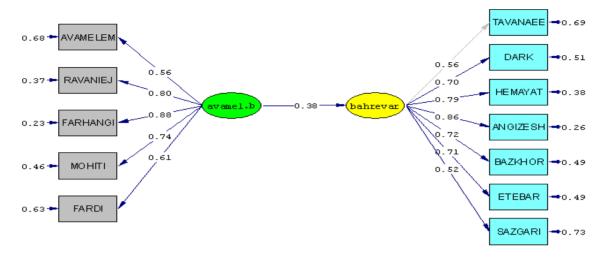
Due to the impact factor of $\beta = 0.31$ and the critical value of t coefficient = 6.28 (-1.96 > t > 1.96) reported in Table 2, which is larger than 1.96, the predicting variable of individual factors can affect the criterion variable of managerial factors and explain it. As a result, this hypothesis is confirmed by 0.95 of confidence and the conflicting claim will be rejected.

Goodness of Fit Tests

When a model has an appropriate theoretical support, the only thing left is to examine the model fitness with data collected by the researcher. In this model, the Root Mean Square Error of Approximation (RMSEA) value, which is an index based on a decentralized parameter, less affected by sample size and is able tomeasure the average of unfitness for any degree of freedom is equal to 0.0136. The value less than 0.0, is an indicator of model's goodness of fit. If the value is less than 0.1, it will indicate a good fit of the model, then, this model has a good fit. Other fitness parameters of the model were measured based on indicators of RMR, GFI, IFI, CFI and NFI (Table 6), which show a good fit for the model.

Table 6: Fit indices of the research ultimate model

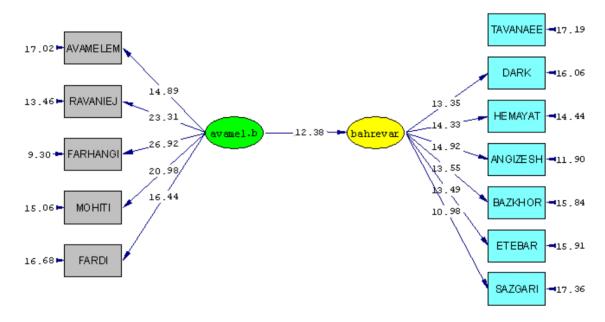
Test Results	Acceptable Range	Main Model	Statistical Index Title
Model Confirmation	χ^2 / df<2	1.47	χ^2 / df
Model Confirmation	P> 0.05	0.087	P-value
Model Confirmation	RMSEA> 0.09	0.0136	RMSEA
Model Confirmation	RMR< 0.09	0.032	RMR
Model Confirmation	GFI> 0.9	0.92	GFI
Model Confirmation	AGFI> 0.9	0.94	AGFI
Model Confirmation	CFI> 0.9	0.90	CFI
Model Confirmation	RFI >0.9	0.92	RFI
Model Confirmation	NFI> 0.9	0.91	NFI
Model Confirmation	NNFI> 0.9	0.92	NNFI



Chi-Square=75.06, df=53, P-value=0.1420, RMSEA=0.040

Figure 2: The main hypothesis model in standard conditions

As chi-square divided by "df"is less than 3, and the RMSEA value is also less than 0.05 (zero), the model has a good fit.



Chi-Square=75.06, df=53, P-value=0.1420, RMSEA=0.040

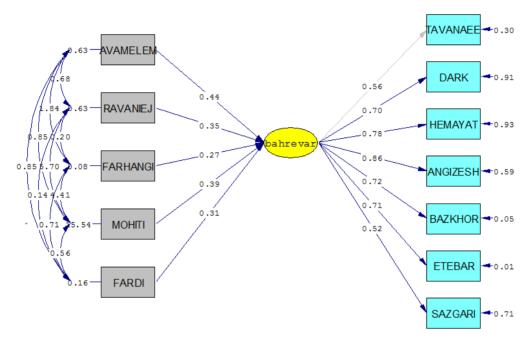
Figure 3: The main hypothesis model in significance number state

The product factors have a significant impact on improving the labor productivity of **Gachsaran** Exploitation of Oil and Gas Company.

$$\begin{cases} \dot{H_0} : \mu_e = \mu_r \\ H_1 : \mu_e \neq \mu_r \end{cases}$$

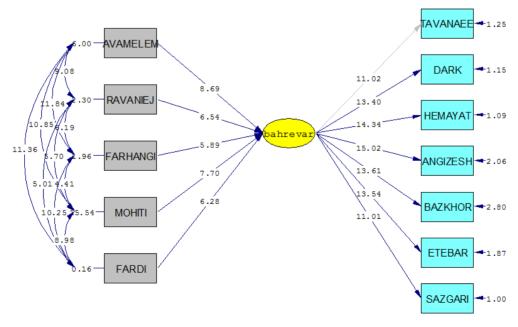
Table 7: Effect of productivity factors variable on criterion variable of labor productivity enhancement

Result	Significance value (t-	Impact	coefficient	Direct path		
	value)	(β)				
Hypothesis	12.38	0.38		productivity	factors	\rightarrow
confirmation				productivity enh	ancement	



Chi-Square=64.92, df=44, P-value=0.08700, RMSEA=0.0136

Figure 4: The main hypothesis model in standard conditions



Chi-Square=64.92, df=44, P-value=0.08700, RMSEA=0.0136

Figure 5: The main hypothesis model at significance value state

Research Article

Due to the impact factor of $\beta = 0.38$ and the critical value of t coefficient = 12.32 (-1.96 > t > 1.96) reported in Table 7, which is larger than 1.96, the predicting variable of productivity factors can affect the criterion variable of productivity improvement and explain it. As a result, this hypothesis is confirmed by 0.95 of confidence and the conflicting claim will be rejected.

Figure 4 shows the standard mode for the model designed for the main hypothesis. As chi-square divided by "df" is less than 3 (6492.44), and the RMSEA value is also less than 0.05 (zero), the model has a good fit.

Conclusion

The research hypothesized that management, social-psychosocial, cultural, environmental and individual factors have impact on productivity and its dimensions. The results of research hypotheses testing showed that:

• Management factors with the impact factor of 0.44 have impact on productivity of human resources, and with 0.95 confidence level, the hypothesis of the impact of these factors on productivity of human resources of Aghajari Exploitation of Oil and Gas Company was verified.

Among domestic research, the research results of Bordbar (2014), Ashori (2014), Salehi *et al.*, (2013), Musazadeh and Amiresmaili (2012), Mehrabian *et al.*, (2012), Mirzayi (2012) and Allahverdi *et al.*, (2011) were consistent with the current research results.

Among abroad studies, Dana et al., (2012) have found results consistent with the current study results.

• Social-psychological factors with the impact factor of 0.35 are effective on productivity of human resources, and with 0.95 confidence level, the hypothesis of the impact of these factors on productivity of human resources of Aghajari Exploitation of Oil and Gas Company was verified.

Among domestic research, the research results of Bordbar (2014) and Ashori (2014) were consistent with the current research results.

• Cultural factors with the impact factor of 0.27 are effective on productivity of human resources, and with 0.95 confidence level, the hypothesis of the impact of these factors on productivity of human resources of Aghajari Exploitation of Oil and Gas Company was verified.

Among domestic research, the research results of Ashori (2014), Musazadeh and Amiresmaili (2012), Mehrabian *et al.*, (2012), Allahverdi *et al.*, (2011) and Moghadm (2010) were consistent with the current research results.

Among abroad studies, Dana et al., (2012) and Mehrabian (2011) have found results consistent with the current study results.

• Environmental factors with the impact factor of 0.39 have impact on productivity of human resources, and with 0.95 confidence level, the hypothesis of the impact of these factors on productivity of human resources of Aghajari Exploitation of Oil and Gas Company was verified.

Among domestic research, the research results of Bordbar (2014), Ashori (2014), Salehi *et al.*, (2013), Mehrabian *et al.*, (2012), Allahverdi *et al.*, (2011) and Honari *et al.*, were consistent with the current research results.

Among abroad studies, Salavati et al., (2013) have found results consistent with the current study results.

• Individual factors with the impact factor of 0.31 have impact on productivity of human resources, and with 0.95 confidence level, the hypothesis of the impact of these factors on productivity of human resources of Aghajari Exploitation of Oil and Gas Company was verified.

Among domestic research, the research results of Bordbar (2014), Ashori (2014) and Allahverdi *et al.*, (2011) were consistent with the current research results.

Among abroad studies, Atafar and Sharifi (2013) have found results consistent with the current study results

Given the above, among the factors assumed in the present study, the management factors had the greatest impact on labor productivity of Aghajari Exploitation of Oil and Gas Company. These factors includesupervisor competence, training at work and promotion system of employees based on merit.

Research Article

Thus, in order to improve the human resources productivity, the officials and managers of the company need to consider these factors more significantly.

Following the management factors, the factors affecting the productivity of labor participating in the study are as follows: Environmental factors, psychological and social factors, individual factors and cultural factors. Considering this, observing the conditions related to these components by managers of human resources productivity will increase.

On the other hand, the goodness of fit tests confirmed the conceptual model of the research suggesting the effect of management, environmental, psychological and social, individual and cultural factors on human resources productivity of Aghajari Exploitation of Oil and Gas Company.

Suggestions

- According to the first hypothesis suggesting the effect of management factors on labor productivity of, it is recommended that the managers and decision-makers responsible in Gachsaran Exploitation of Oil and Gas Company consider the staff competence for promotion. Especially, the competence of people work as units' supervisors and departments'executives should be ensured. Also, in-service training courses should be held for the staff fitted to their area of activity.
- In line with the second hypothesis suggesting the effect of socio-psychological factors on labor productivity, it is recommended that the relations between managers and employees are appropriately evaluated and some efforts made to improve these relationships and create an intimate atmosphere in the workplace. Also, necessary measures to increase job satisfaction and feeling a sense of job security need to be taken and the feeling of fairness in the workplace has to be enhanced in employees.
- In line with the third hypothesis suggesting the effect of cultural factors on labor productivity, it is recommended to the managers and units supervisors to provide the conditions for growth and promotion of staff and properly evaluate the work consciousness and adhere to the rules of employees, and think of measures necessary to strengthen work ethic and the spirit of legalism in employees.
- According to the fourth research hypothesis suggesting the effect of environmental factors on the productivity of human resources, it is suggested to regularly evaluate qualitatively the physical conditions of workplace regarding health, hygiene and safety, beauty and cleaning, appropriate tools and equipment, cleanliness and freshness, ergonomics, quality of raw materials and maintenance system of equipment and machinery and try to improve their situation.
- According to the fifth research hypothesis about the effect of individual factors on labor productivity, it is recommended that while assigning duties and powers to the staff, the experience as well as job and task suitability to the individual's skills and interests will be considered.

ACKNOWLEDGEMENT

We are grateful to Islamic Azad University, Firuzkuh branch authorities, for their useful collaboration.

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Research Article

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