

Organizational Pathology in the Area of Human Resource Productivity; (Case study: Iranian Airports Company)

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ABSTRACT

In recent years due to economic sanctions and some problems in the executive budget emerged at the country, the topic of change management within the organizations and governmental companies has been taken into account by senior managers. A variety of models and patterns have been proposed in the context of current status existing in the companies. This paper intends to apply Tichy's Technical, Political, Cultural model to show Iranian Airports Company works at which areas and fields. Further, after recognizing the most important area, an effective prioritization of it has to be proposed. The statistical population of this research entails the personnel working at the department of aviation Operations within the company. According to the results from the Delphi method used in this paper, one can say that the company encountered difficulties and damages in five main areas of strategy, systems, structure, human resource management and organizational processes, where a large body of difficulties emerged at human resource management so that the company needs revise and modify this area.

Keywords: Human Resource Management, Productivity, Organizational Pathology, Delphi Method.

Introduction

After representing the theory of systems in management, drawing attention has been assigned to environmental changes within the organizations. Rapid changes on one hand and great financial problems on the other hand which companies face, obliged the managers to assign the topics of change management and organizational change in their prioritization. Yet, the importance

assigned to the change process within the organizations has been from the early a point of question-consequently it is asked what is the main cause of inefficiency within the organization?, to give a clear response to such question, the Organizational Pathology has been transformed as managerial necessity within the organizations. The first Organizational Pathology model aimed to

providing an infrastructure for change management has been observed in the model "Force field analysis" by Cartwright, taking into account in several research activities over the years (Cartwright, 1951). Indeed, Organizational Pathology models help the managers to recognize the weaknesses existing in the organization, and then concentrate on the most important cause and finally go through resolving it using an in-depth planning. Nowadays, the Iranian government agencies are working in dynamic environments. On the other hand, due to economic situation governing the society and an attempt to implementing resistance economic approach, state's consolidated budget has been taken as the leading factor which the organization encountered. Hence, such organizations besides sustaining on their survival by adapting themselves with environmental changes have to reduce the costs by updating their activities as much as possible. Iranian Airports Company in charge of management and operation of the airport operations has assigned a particular position to itself among the organizations which work under the ministry of Works and Urban Development. According to fiscal consolidation policies within the country, one of the main concerns of the managers over the years has been the issue of productivity, identification and modification of inefficient factors. According to the difficulties mentioned above, this project aims to give a clear response to the questions as follows: what are the causes of inefficiency occurred in activities by Iranian Airports Company?, which of the causes recognized influences the most the inefficiency of activities?; hence, this paper first goes through to review the history of organizational pathology and productivity in order to review organizational damages which lead to inefficiency of activities in Iranian Airports Company .

Research Background

Organizations are often considered as living systems where are vulnerable to pathogens as humans. It is commented that an organization might be quite ill and its condition may be pathological. Organizational diagnosis is the process of diagnosing an organizational health, by finding any pathogens and suggesting a cure for those pathogens. The purpose of this paper is to create an understanding of the system; this understanding provides a basis of determining if any change is required (Alderfer, 1980).

Further, Banjosa (2010) has defined Organizational Pathology such that "it is defined as a method to analyze the organization aiming at defining organizational deficiencies and planning to resolve them through organizational changes and development". To address several research in the context of Organizational Pathology, one can observe that the studies conducted in the area of organizational development and change can be divided in three main axes: 1- develop a model for Organizational Pathology, 2- select a method and guideline to gather data in the process of pathology, 3- methods and techniques of analysis and collection of data; to sum up, Hynes (2008) analyzed the effect of office environment on productivity and found that it had the greatest effect on office productivity. (Hayes, 2002). Choosing a proper model for pathology is an infrastructure for upcoming stages, so this matter of importance has been prioritized over other topics. Intellectual framework which the practitioners in the context of organizational development use to measure the organization is called the pattern of pathology (Beer and Spector, 1993). An overview of the research in the context of organizational pathology show that these models mainly have addressed the overall view on the organization and all the systems existing at them .

Burke and Litvin model (1992) have categorized the models of organizational pathology in four main categories :

Models help to enhance our understanding of organizational behavior .

Models help to categorize data about an organization.

Models help to interpret data about an organization.

Models help to provide a common, short-hand language .

Anyhow, an organizational model is a representation of an organization that helps to understand more clearly and quickly what we are observing in organizations. Zali *et al.*, (2006) by an overview of organizational pathology patterns, have introduced patterns as follows as the most important practically used patterns .

Force field analysis (1951)

Leavitt's model (1956)

Likert system analysis (1967)

Open systems theory (1966)

Weisbord's six-box model (1976)

Congruence model for organization analysis (1977)

Mckinsey 7S framework (1981-82)

Tichy's technical political cultural (TPC) framework (1983)

High-performance programming (1984)

Diagnosing individual and group behavior (1987)

Burke-Litwin model of organizational performance and change (1992)

Falletta's organizational intelligence model (2008)

EFQM model

Weisbord model

Tichy's technical political cultural (TPC) framework is addressed followed by the purposes of this paper.

Tichy's Technical Political Cultural (TPC) Framework

Tichy's model includes inputs, throughputs, and outputs, which is consistent with the

open systems, where Tichy identifies key variables in the model which are important to the change management process. In this regards, the environment and history are two major categories of input to the organization whereas resources are a third category of input. The throughput variables, or change levers, identified in the model include mission/strategy, tasks, prescribed networks, human resource management, organizational processes, and emergent networks. Each of the factors mentioned above can be defined as following :

Mission/strategy: the organization's approach in performing missions and its strategy and measures and indices of organization's efficiency

Organizational processes: the set of activities within the organization come to realize aiming at doing the tasks committed to them.

Prescribed network: this is indeed the very formal network of the organization or organizational structure which indicate various departments, all the duties and etc .

Emergent network: this includes a variety of organizational systems such as Quality management systems, control systems, financial systems.

Human resource management: this includes features of organization members such as leadership style, human resource management, employment and *etc.*

Tichy's central argument lies in the output which indicates the optimal performance of the organization. Surely, he believed that in the light of a particular attention shed on inputs and processing process, and then the optimal output has to be emerged, refer to Figure 1 for this.

Labor Productivity

The term productivity in economic terminology was first used roughly two decades ago. This term is assumed as a mindset and culture that is thought to

promote and improve whatever exists across the world particularly the industrial states (Etemadi *et al.*, 2009). The International Labor Organization has defined productivity in this way, "productivity is defined as the ratio of output to one of the factors of production, capital, labor and management". Productivity measures can be distinguished

from each other as the general criteria and components, where manufacturing firms are always faced with the problem of promoting operational performance and labor-force management. The utilization of human resources is closely correlated with operations and production performance.

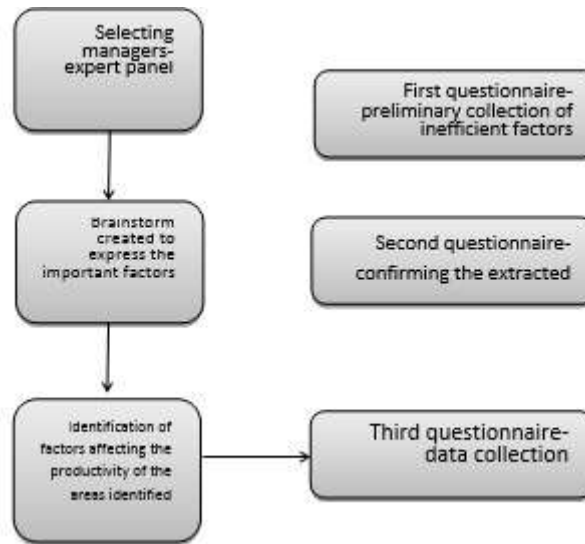


Figure 1. Tichy's technical political cultural (TPC) framework

Measure of total productivity achieves by dividing the total output to all production factors (inputs). Productivity measures of the component achieves by dividing the total output of organization to one of production factors such as materials, labor, capital, energy (Chen *et al.*, 2003). Human resource productivity is the leading measure of productivity because it is mainly associated to the organizational analyses. Further, human force is a data which can be measured simply. Hence, the leading element in any attempt to improve productivity is the very notion of human resource (Nasrpour, 2003). To advance productivity, it is necessary before going through anything to recognize the factors affecting productivity. Some scholars have characterized the factors influencing human force productivity in the form of education, training, workforce experience, managerial quality, investing on

equipment, technology and social environment (Connel *et al.*, 2009).

In Muir and Neville Smith model, the relationship between human forces with other variables have been shown as follow:

Where P=performance, Rc= Role Clarity, C=Competency, E= Environment, V=value, Pf= Preference fit, Reward= Rw have been reported .

In the model by Hersey and Goldsmith, Human performance is a function of the variables such as P=f (A.C.H.I.E.V.E), where there are P=performance, A=Ability, C=Clarity, H=help, I=Incentive, E=Evaluation, V=Validity, E= Environment. Further, In Muir and Neville Smith model, three main factors including motivation, human force empowerment and working life quality have been used to assess human force productivity. The factors including Human needs, job roles, performance feedback and

evaluation were mentioned in the motivation factor of importance. Staff training, the infrastructure to emerge creativity, employees' participation and available resources were mentioned in the human force empowerment, where also communication system of personnel practices, administration and human factors engineering were mentioned in the working life quality .

Research Questions

According to the main problem mentioned in present paper known as observing and identifying the main cause of inefficiency within Iranian Airports Company regarding the proposed research model, the most important questions would be as follows:

At which of the areas including strategy/mission, human resources, organizational structure, organizational

systems and organizational processes, the company encounter difficulties?

Which of the areas mentioned above has to be prioterized by managers?

What are the factors influencing the productivity of areas recognized with difficulties ?

Research Methodology

In present paper, according to the issue known as pathology of Iranian Airports Company, combined method has been used. In the early stage to recognize the leading area found with difficulty, the Delphi survey method has been used (Sarmad et al, 2005). In the second stage by selecting a model using descriptive method, factors influencing the area found with difficulty have been recognized and the area has been addressed as the leading area, refer to figure 2 for this.

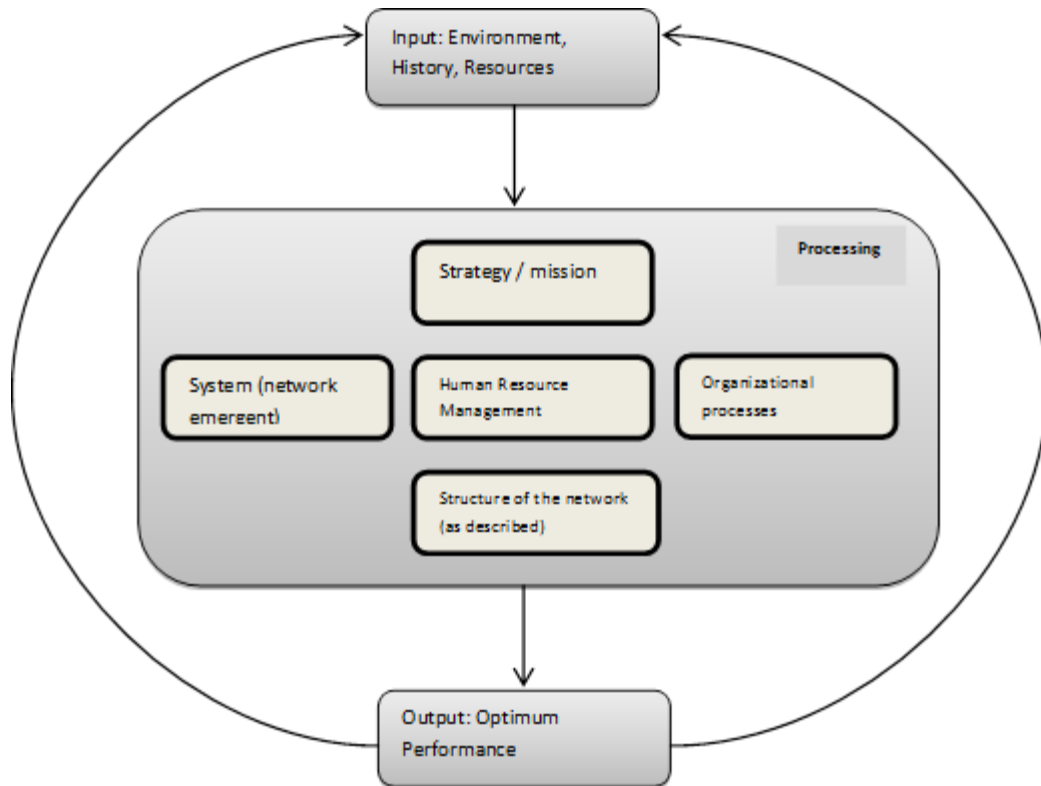


Figure 2. Flowchart of Research

One of the methods to attain knowledge from teamwork is Delphi technique. This technique includes a structure to predict and help in providing survey, data collection (Kennedy). Delphi has been widely used for business forecasting and has certain advantages over another structured forecasting approach, prediction markets. The Delphi method was developed by Project RAND during the 1950-1960s (1959) by Olaf Helmer, Norman Dalkey, and Nicholas Rescher. It has been used ever since, together with various modifications and reformulations, such as the Imen-Delphi procedure. In other words, these studies aim to propose a method to access view of an expert group (Okoli and Pawlowski, 2004). Lack of a theoretical framework mentioned as weakness in this method caused some believe in Delphi as a technique, others use the terms as Delphi study, Delphi survey, Delphi poll, Delphi method and Delphi consensus study for defining the Delphi studies. Such diverse term caused many definitions from Delphi appear: Delphi is a systematic approach or method in the research to extract views from an expert group on a topic or a question .

In other words, The Delphi method is a structured communication technique, originally developed as a systematic, interactive forecasting method which relies on a panel of experts. The experts answer questionnaires in two or more rounds. After each round, a facilitator provides an anonymous summary of the experts' forecasts from the previous round as well as the reasons they provided for their judgments. Thus, experts are encouraged to revise their earlier answers in light of the replies of other members of their panel. It is believed that during this process the range of the answers will decrease and the group will converge towards the "correct" answer. Finally, the process is stopped after a pre-defined stop criterion (e.g. number of rounds,

achievement of consensus, stability of results) and the mean or median scores of the final rounds determine the results. Furthermore, Delphi method means reaching to an agreement through a series of questionnaire rounds with keeping to have feedbacks to the panel members by anonymous (Keeney *et al.*, 2001).

There is not an explicit rule in how to choose the sample group and the experts, where the number of experts relies on examples of homogeneous or heterogeneous factors, Delphi purpose or extent of the problem, the quality of decision making, the ability of the research team, internal and external validity, time and resources available in the data collection, problem domain accepting answers (Windle, 2004). Anyhow, the number of participants is usually less than 50 individuals mainly 15-30 individuals. In present paper, with regard to the purposes of research, expert panel for this stage of the research consists of 15 experts specialized at aviation industry. In the second stage with regard to previous stage, it was specified that Area of human resources is prioritized to have the changes where on it is mainly addressed to the Identification of factors affecting the efficiency of human resources. In this regards, the model by Mehrabai *et al.*, (2010) as the research model to recognize the factors affecting the efficiency of human resources within Iranian Airports Company has been used. In this model, 10 factors including Leadership style, employee empowerment, desire and motivation of the personnel, organizational support, organizational culture, Validity of Decisions, organizational structure, documentation, providing services, innovation and creativity, environmental conditions have been recognized as the leading factors influencing labor productivity. After consultation with the members of the expert panel, six important factors including Leadership style,

employee empowerment, desire and motivation of the personnel, organizational support, organizational culture and environmental conditions were chosen as the most important factors influencing labor productivity within Iranian Airports Company.

Findings of Research

Findings of this research in the first part of research have been reported as follows:

After preparing the first questionnaire, Tichy's technical political cultural (TPC) framework was chosen as a framework to recognize the inefficient factors of Iran Water and Power Resources Development Co., where the questionnaires were prepared based on this framework. The first

questionnaire was prepared in two parts was distributed among the members of the panel in two rounds. In the first questionnaire, the scholars asked for confirming the problems existing in 5 areas of Tichy's technical political cultural (TPC) framework. In this part, the questions of questionnaire were classified in three content categories: Demographic questions, questions related to the five dimensions of organization, and questions concerning the validity and reliability of questionnaire. The validity of this part of questionnaire was measured using Cronbach's alpha at 73%, indicating the high validity. After this part by having the questionnaire collected, the results were collected in the form of t-test; refer to Table 1 for this.

Table 1. Core damages of company in perspective of the members of the expert panel

Area of study	Mean	Standard deviation	Deviation error
Strategy / mission	2.33	0.394	0.038
Human Resource Management	2.04	0.386	0.037
Organizational structure	1.77	0.384	0.036
Organizational systems	2.11	0.326	0.032
Organizational processes	1.90	0.442	0.043

In the second questionnaire, the factors considered in the context of the 5 categories, and together with the members' response to the first questionnaire, they were sent to each manager who was a member of experts panel. Thereafter, it was asked from the panel members to change or approve their responses based on views and causes of

other experts, whereby it was essential for them to change a category of the factors in case of needing to be changed. In the third questionnaire, it was asked from the expert panel to measure each of the factors recognized with damage where the final factors with the mean of their importance degree can be seen in Table 2.

Table 2. The final factor extracted using the delphi method

Main factor	Percentage of votes obtained in the third questionnaire		Average importance (third round)
	First round	Second round	
Strategy	%71	%75	4/40
System	%75	%76	4/03
structure	%60	%58	4/10
Human Resource Management	%63	%69	5/48
Organizational processes	%52	%55	4/80

According to the results from this stage of research, one can say that a particular attention is assigned to the area of human resources management, so, it was addressed to identifying the factors influencing human resources productivity in this company in the next stage based of the research model. The statistical population of this research entails the personnel working at the department of aviation Operations within the company, where on the whole 400 individuals working at four general administrations and management area compose the statistical population. Systematic random method has been chosen among a variety of sampling methods. The organizational factors influencing human force productivity improvement grounded on human force productivity were gathered through library study and comparing various models and the final research model was extracted with interviewing the expert panel of this area. Since the research contains qualitative variables, descriptive statistics and inferential statistics have been used, where the descriptive statistics applied with tables and diagrams to show the frequency distribution in the studied society, and the mean from central indices and standard deviation from indices of dispersion, and the inferential statistics by using Friedman test for ranking factors and Kolmogorov - Smirnov test for

examining normality and homogeneity of the distribution of scores. The confidence level and error level have been considered 0.95% and 0.05 in this paper. The sample size calculated using the expression as follow:

$$n = \frac{NZ_{\frac{\alpha}{2}}^2 pq}{\epsilon^2 (N - 1) + Z_{\frac{\alpha}{2}}^2 pq}$$

Where the value of N equals to 400, $Z_{\frac{\alpha}{2}} = 1.96$, $p=0.5$, where by setting the numbers in the formula we would have :

$$= \frac{400 * (1.96 * 1.96) * 0.5 * (1 - 0.5)}{(400 - 1) * (0.05 * 0.05) + (1.96 * 1.96) * 0.5 * (1 - 0.5)}$$

$n = 196$

Hence, the number needed for sampling was reported equal to 196 individuals. According to the sample size, 210 questionnaires were distributed among the society members, consequently 203 questionnaires gathered and went through examination process. To evaluate the validity of research, the content validity was used and the questionnaire was evaluated and corrected by 8 specialized experts. Further, to evaluate reliability of questionnaire, Cronbach's alpha method has been used. Finally, Cronbach's alpha for each of the variables achieved as what shown in Table 3.

Table 3. Cronbach's Alpha

Variable	Cronbach's alpha
Empowering employees	.797
Personal desire and motivation	.850
Leadership style	.755
Organizational support	.766
Organizational Culture	.711
Environmental conditions	.837

In following, the results gained, indicating that firstly the descriptive statistics associated to each of the factors are shown and then the analysis using inferential statistics would be provided. Frequency

distribution of sampling group in terms of age, organizational position and education status, refer to Table 4, 5 and 6 for this.

Table 4. Frequency distribution of sampling group in terms of age

Age	Frequency	Frequency percentage
20-29 years	29	14.3
30-39 years	125	61.6
40-49 years	42	20.7
Over 50 years	3	1.5
Total valid	199	98.0
No reply	4	2.0
Total	203	100.0

Table 5. Frequency distribution of sampling group in terms of organizational position

Current position	Frequency	Frequency percentage
VP / General Manager / Assistant General Manager / Director	9	4.4
Head of Department, Deputy Director, Expert responsible	51	25.1
Expert	119	58.6
Total valid	179	88.2
No reply	24	11.8
Total	203	100.0

Table 6. Frequency distribution of sampling group in terms of education status

Current position	Frequency	Frequency percentage
Bachelor degree	160	78.8
Master degree	31	15.3
Phd	3	1.5
Total valid	194	95.6
No reply	9	4.4
Total	203	100.0

Indicators of central tendency and dispersion for research variables have been calculated shown in Table 7.

The first step in using inferential statistics is determining normality of distribution, reporting where the normal distribution exists, then the parametric statistics can be used for data analysis. For this, K.S test has been used. The results of test have been shown in Table 8.

In the light of having the sample group with the sample size over 50 cases, the Kolmogorov – Smirnov is preferred to be used. According to the table, one can say that, since the significance value for the index is

higher than the threshold level, 0.05, so the distribution of scores on this index is normal. Hence, parametric inferential statistics is used here. After determining the normality of distribution to go through examination of the research hypotheses, testing a sample mean has been used. The results of such analysis have been shown in table 9. As one can see, due to the fact lied in a point that the value of sig (0.000) is less than $\alpha=0/05$, so the zero hypothesis with the value equal to 3 has not been confirmed. One the other hand, the confidence level (95%) does not show the difference of mean, so this can be a leading

cause which confirms the entire research hypotheses.

Table 7. Organizational factors scores of groups

Variable	N	Mean	Standard deviation	Lower limit	Higher limit
Empowering employees	203	4.0521	0.40212	0.9964	1.1077
Personal desire and motivation	203	4.1522	0.40275	1.0965	1.2080
Leadership style	203	3.7081	0.53275	0.6344	0.7818
Organizational support	203	3.9623	0.43454	0.9021	1.0224
Organizational Culture	203	3.4975	0.44475	0.4360	0.5591
Environmental conditions	203	3.6105	0.51734	0.5389	0.6821

Table 8. Kolmogorov – smirnov test

Variable	Statistics	Significance value
Empowering employees	1.288	.077
Personal desire and motivation	1.311	.065
Organizational support	1.308	.069
Organizational Culture	1.264	.082
Environmental conditions	1.361	.059
Leadership style	1.299	.074

Table 9. The results of t-test for the research hypotheses (One-Sample Test)

Hypothesis	Test Value = 3				Is the hypothesis approved?
	t	df	Sig. (2-tailed)	Mean Difference	
1	37.277	203	.000	1.0520	yes
2	18.937	203	.000	0.7081	yes
3	15.939	203	.000	0.4975	yes
4	40.762	203	.000	1.1522	yes
2	18.937	203	.000	0.7081	yes
5	31.552	203	.000	0.9622	yes
6	16.813	203	.000	0.6105	yes

After getting confirmed the research hypotheses to prioritize the variables influencing the human force productivity among the personnel working at the department of aviation Operations within

the company, Friedman test was used. The results of this test have been shown in Tables 10 and 11.

According to the results from Friedman test, the order for the prioritization of

variables influencing human resources productivity among the personnel working at the department of aviation Operations within the company includes: Personal

desire and motivation, Empowerment of employees, Organizational support, Leadership style, Environmental conditions, Organizational Culture.

Table 10. Friedman test

No	Chi-square	Freedom degree	Significance value
203	361.400	6	0.000

Table 11. Friedman test to determine the prioritization of variables influencing human resources productivity

Variable	No	Mean	Standard deviation	Average Rating
Empowering employees	203	4.0521	.40212	5.27
Personal desire and motivation	203	4.1522	.40275	5.51
Organizational support	203	3.9623	.43454	4.68
Organizational Culture	203	3.4975	.44475	2.82
Environmental conditions	203	3.6105	.51734	3.22
Leadership style	203	3.7081	.53275	3.78

Conclusion and Suggestions

Before taking any action in increasing the productivity, it is mainly addressed to recognizing the current status and prioritizing the approaches. To get informed of the increasing trend of productivity, this variable has to be measured using different indices in specific periods. This paper intends to recognize the variables influencing the human force productivity among the personnel working at the department of aviation Operations within the company and then go through prioritization of them. According to the results of this paper, six main factors influencing the human force productivity were identified and then prioritized.

According to the results from the findings, the suggestions as follows can be proposed: According to the results from the first stage of research, the area of human resources at the department of aviation Operations within the

company is prioritized for revision aimed to improve the level of productivity. According to the research conducted here, personal desire and motivation had the most effect on human force productivity. According to the questions used in this part of questionnaire, it is crystal clear that salaries and bonuses and welfare systems were of typical in improving this factor. Timely payment of salaries, wage increases consistent with inflation and cost of living, paying cash rewards and allocation of financial resources and welfare were all the factors influenced the increase of human force productivity. One way to explain the rights and benefits based on the type of job in any part of the work under working stress and sensitivity can be of importance in this regards. Further, salary commensurate with type of job causes motivation occurs whereby such motivation forms the person’s behavior. Hence, by appearing tensions, more rational

behavior appears whereby by such peacefulness, the increasing concern reduces .

Empowerment of employees with the centrality of human resources training has a significant impact on the productivity of human resources. Hence, continuous training of human force particularly specialized training in certain occupations and any attempt in improving quality of human force is such a long term investment in human resources with return. Full attention to the training of human resources is one the factors resulting in productivity increase at the department of aviation Operations within the company .

Leadership style influenced human force productivity by which the area of management can motivate the employees by performing necessary scenarios through granting financial rewards, delegation of authority, creating a friendly atmosphere, creating a collaborative work platform, reducing additional costs, choose an appropriate policy on improving productivity, job satisfaction and *etc.* in order to affect human force productivity in the area .

Environmental conditions affect human force productivity at the department of aviation Operations. The use of ergonomic measures (human engineering or science synchronization between human and machine work area and machine) causes health, vitality, well-being, and ultimately increasing the safety and productivity of human resources appears .

The other factor which is of typical at the department of aviation Operations is the very notion of organizational support. In prioritization implemented in this paper, organizational supports with centralization affecting job satisfaction are categorized in third rank. Hence, this indicates that job satisfaction of employees in this area and positive feeling of them from their job and person's satisfaction from dependence on

company in improving human force productivity are of typical .

According to the research conducted here, the organizational culture is categorized in sixth rank. Organizational culture affects productivity. This builds identity of employees working at the department of aviation Operations because attracting the creative and talented staff manifests in form of a valuable culture. Here, Employees' sense of belonging and strong ties to the organization would be appeared. Further, the organizational culture would influence severely how to make decisions.

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