

# The study of effective factors on risk management in Isfahan Steel Mill

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## Abstract

Risk management is the process of risk measurement or evaluation and then the strategies planning for managing the risk. In general, implemented strategies include: transferring the risk to the other sections, prevention of risk, lowering negative effects of risk and adoption of a part or the whole consequences of a specific risk. In this survey, firstly the feasibility of implementing the risk management was studied and then risk management and the factors influencing on it described. The method of this research is descriptive – measuring. The statistical population of this research includes the staff employees and top managers in Isfahan steel mill with the number of 559 persons so that 221 persons were selected as sample and tested using a researcher – made questionnaire with reliability 0.96. The results of data analysis showed that from the view of technical, operational, time, place, economic, legal productivity, relative benefit and management factors, it's feasible to implement the risk management in steel mill company and based on obtained correlations coefficient this possibility is very intensive confirmed from the perspective of the personnel and staff top managers.

**Keywords:** effective implementation, Isfahan steel mill, strategic factors, probability factors, risk management.

## Introduction

Preventive confrontation the probable risks will result in increased efficiency and productivity in companies and industries. Hence, organizations are trying to lower the probable risks through as-

signing the rules and standards. Accordingly, risk management is a systematic process of planning, identifying analyzing reacting, supervising and controlling an organization risk and its goals include increased possibility, positive events effect, lowered possibility and effect of negative events. Specifically, risk management in Isfahan steel mill is very important with respect to its high risk as well as high impact on relevant industrial, economic, social and political systems. Lack of environmental confidence and intensive organizations and managers competition has faced them with various challenges. To manage these challenges effectively, novel management approaches and specific competence have been drawn and proposed. Recognition and risk management are as the new approaches considered to reinforce and promote the organizations effectiveness. In general, a risk is identified having the probability of the loss and / or lack of confidence, different types and various categories. One of these categories is the profitable and dangerous risk. All of the risk forms include common elements as content, activity, condition and consequence. Another category is the strategic and operational risk. Risk management indicates the concept of risk assessment and adoption of strategies for managing the risk. Types of risks may be categorized according to their occurrence potential and effects resulted in risk portfolio and applying proper strategies (transfer, avoidance decrease and admission). Risk management includes the process of making a distinction, evaluation, allocation and management of the whole project risks. The risks are in all projects as an unclear event. Risk is usually identified in project management as the following: Risk is a probable result of an event occurs when the project faced with that event. However,

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risk always has two meanings by itself: “future and doubt”. Therefore, if an event not related to the future and / or we have no doubt about its occurrence, it won't be regarded as a risk. Although some of the risks are always defined with failure and no success according to the dictionary, they may also be with opportunities and chances. In any way, after recognizing and developing the risk database we should analyze the risk to categorize and rank the dangers (opportunities). Answering to these questions, “are the risks with a high intensity threatening the organization?” or “how the control and supervision processor should be toward it?” are always considered. Therefore, the factors of efficiency and capability should be defined and applied in defining the magnitude of impact. The magnitude of impact means the sort of danger imposed on the process of organization activities as the result of a danger occurrence.

## Research method

In the present survey, regarding the nature of subject studying the possibility some techniques are proposed in order to implement the framework of z effectively on a company field (ERM) in Isfahan steel mill. Also, regarding the goals of this survey, a descriptive – measuring method has been utilized having an applied nature done periodically. Descriptive research as found by its name describes the events, incidents and different topics objectively, really and regularly. In this method, no conclusion and inference are drawn on the findings and only the obtained data classified and presented (Nadi & Sajadian, 2010, 123). The descriptive – measuring research method used in the present survey aims to study the feasibility and to propose the techniques for effective implementation of the z framework on company field (ERM) in Isfahan steel mill. The statistical population includes all staff employees and managers. Based on the given statistics in July 2012, the number of staff employees in steel mill company were 520 persons and the managers 39. Of this number, 221 persons were regarded as the sample number using Cochran's formula and 221 staff employees and managers formed the statistical sample of this research. To gather the data in this research, a researcher – made questionnaire has been used so that some questions considered for each of the strategic, productivity, management, relative benefits, feasibility, technical, operational, economic, time, place and legal factors and intro-

duced to the respondents. To research any of the research variables, Likert 5 – item – scale (range) was applied as interrogative in questionnaire. In this scale, the respondent was asked for implementing the rate of his / her agreement or disagreement with any variable based on a scale. After initial formulating the questionnaire, face and content validities were studied and confirmed by the masters. In addition, the validity of questionnaire was also confirmed from the view of questionnaire questions corresponding with the subject and goals of the survey by supervisor and advisor. The validity index of the total scale in this survey was obtained 0.96 and the questionnaire validity was estimated 0.8 based on the initial studies indicating a high validity of measurement tools. In this survey using SPSS – 16 software, the score of each forming 11 – fold factors was calculated based on the weight and then the data analyzed at the level of descriptive statistics. At the level of descriptive statistics using statistical characteristic such as frequency, percent, mean and drawing the chart, the data was analyzed. At the level of inferential statistic, correlation coefficient test and Chi – square were used.

### Statistical tests

#### X2 independence test (k2 or Chi – square)

Determining the surface of below curve H0 and H1 in k2 independence test for correlation coefficient test and correlation among the scores in interpreting and clarifying the scores of school and university students are necessary to specify the relationship among two or some sets of scores. For example; it's often asked what relationship is between the intelligence scores and scores of academic achievement and additionally, many of the teachers are interested in finding if there is a relationship between the scores of academic achievement in early and late years. The rate of relationship between two sets of scores related to a single group of school or university students are specified by calculating the correlation coefficient. The most prevalent method for determining the correlation is the method of calculating Pearson's moment correlation coefficient. This correlation coefficient is shown with r.

## Results

- From the view of technical factors, implementation of risk management in steel mill company is possible. There is a significant relationship.

- From the view of operational factors , implementation of risk management in steel mill company is possible. There is a significant relationship.
- From the view of time factors , implementation of risk management in steel mill company is possible. There is a significant relationship.
- From the view of place factors , implementation of risk management in steel mill company is possible. There is a significant relationship.
- From the view of economic factors , implementation of risk management in steel mill company is possible. There is a significant relationship.
- From the view of legal factors , implementation of risk management in steel mill company is possible. There is a significant relationship.
- From the view of productivity factors , implementation of risk management in steel mill company is possible. There is a significant relationship.
- From the view of relative benefit , implementation of risk management in steel mill company is possible. There is a significant relationship.
- From the view of management factors , implementation of risk management in steel mill company is possible. There is a significant relationship.

## Suggestions

- The factors need to be considered in the process of risk management include: customers, users, project team, relevant projects and providers
  - Preparing the necessary ground from the mental and security views for different people classes by all of the authorities
  - Multilateral commitment of top managers about time and resources
  - Supporting and cooperating with the risk management group
  - Organizing risk management groups in steel mill company
  - Studying the competence of risk management group
  - Being aware of and cooperating the staff employees with risk management
  - Continuous evaluation and identification of the risks related to the information technology ( IT ) mission

## Techniques to reinforce management factors

- Designing the system for getting information and conducting applied surveys and relationship with the counseling and research centers about careers enable the organizations to make benefit

from information from the informed persons about different fields of organization

- Designing the knowledge map , adding together and organizing the organization knowledge resources like writings , files , software resources , expert and scholar persons and so on as well as making benefit from them in organization's decision – making
- Having a continuous efficient and academic educational and training system to increase the persons' scientific and consciousness level in an organization with respect to rapid changes in today's world using novel and advanced management tools of techniques and technology , for instance ; setting up the training workshops and seminars for the persons

- Applying an effective management model

Supervisors must be familiar with the newest information and knowledge related to motivation and leadership and apply the methods with the best consistency and correspondence with conditions and situations of responsibility as a supervisor.

The most important methods are as follow :

A. Concentrate on the most important elements of your career : How do you react to the forces and events out of control as unexpectedly device and tools failures , workers problems , governmental regulations and similar cases ? Although it's necessary to pay attention to these issues , their successful management may bring you a credit . The most important part of your job includes the functions you must do as a supervisor. These functions are : making benefit from the opportunities , overtaking the competitors , increasing the safety , promoting products quality and lowering the costs caused your organization be more effective and efficient. Regardless of the work type , this attempt discriminates you from the other supervisors and consolidates you as a real leader.

B. Determine high standards for yourself : If you are with a high energy and power in achieving your goals , it will cause the organization to try for corresponding itself or you. The only way of expecting high performance standards from the subordinates is to set higher standards for ourselves.

C. Make sure of that the personnel's needs are met. The minor needs of employees are food , clothing and housing and the major needs are respect , security , belonging sense and self – discovery. Many of the people can meet their least needs by working anywhere or even not working. Therefore , their desire to survive and to work seriously

depend on the rate that their needs for respect, belonging sense and the sense of being useful is being met. You should know that sometimes the needs of personnel and organization are in conflict. Moreover, it's impossible to meet all of the spiritual and mental needs by working. You must specify the consistent needs and make the most benefit from their needs met (for example; in safety).

When you recognize the sources of conflict, you are capable of coping with them so that the employees get informed of their position (for example; in talking behind one's back).

D. Train the strong and efficient employees: If you want the employees feel they are trained and increase their knowledge and information, you should give them the challenging projects because their self-reliance and sense of cooperation reinforced by performing these projects successfully. The supervisors who train the employees not only have a strong working group but also attain an additional time themselves and work more productive.

#### *Techniques to reinforce relative benefit factors*

Plans (programs) based on variable rights: Performing the plans aiming the motivation, employees' cooperation in benefit, reward and prize are the plans based on variable rights. What makes this plan distinction from the traditional rights and reward plans that the person not only receive his/her salary and wage based on the job history or the rate of attempt but also a part of his/her receive is paid based on his/her performance and organization. According to such a plan, the rate of receipt changes along with the performance change. Passing the time, the ones with weak performance will receive lower wage and salary and the ones with high performance receive more wages in proportion to increased company revenue. Four different plans performed in this case are: wage based on the section, award of prize, cooperating in income, the plan of giving the reward to the group.

Payment plans based on skill (competence): Payment based on skill is another method of wage payment based on the type of work in which instead of the job title, the skill or the procedure of doing the work determine the amount of the person's salary. This plan (program) encourages the employees to learn more skills and as the person would be aware of another works and become skillful in many affairs the communications be more easier. Running such these plans causes that inefficient behaviors be decreased and it's hardly possible that the

organization be faced with the cases in which the person uses the sentence "it's not my duty" and finally payment based on skill causes the performance improvement.

Plans of flexible benefits: It is in a manner that the worker or employee is able to adopt desired benefits among the available benefits. The aim is to give chance to any worker or employee with respect to the type of need and conditions or situation encouraged so that to select a specific set of advantages which he/she wants to be benefited from them. If all employees are paid the same benefits then it will be supposed that they all have the same needs and no doubt that this assumption is proper. Hence, using flexible benefits the marginal benefits (advantages) and relevant costs may be changed to a type of motivation for employees.

#### *Practical suggestions*

With respect to the table and chart in which the sum of the strategies factors mean and feasibility have been compared with each other and their intersection point is in an area with a good potential, the following suggestions are made along with giving some techniques for reinforcing any of the factors and transferring them to an excellent potential.

#### *Techniques on technical factors reinforcement*

Risk prioritization in organizations:

After obtaining the numbers as qualitative criteria of probability and influence of risk incident with a significant integration of them, we attain a criterion (index) for prioritizing the investigation and allocating the responding actions to the risks. For instance, the prioritization criterion may be defined as mean possible scores and impact:

Priority = (occurrence priority + effect of occurrence) / 2

Even we may, if desired, attribute the colors with different orders to prioritize the risks so that the risks needed more attention can be seen better.

In this phase after systematic prioritizing of risks, a comprehensive and edited program including total responding actions to risk (avoidance, transfer, decrease, admission) should be prepared based on allocated priorities. In fact, this phase is the planning of time schedule for these actions. These actions are divided in two following groups:

- Preventive actions to lower the possibility of the risk incident
- Corrective (attentive) actions to lower the impacts of the risk incident

For any of the actions listed, a resource is allocated and determined a date on which these actions should be done until that date.

### Planning

Planning is a phase in which the quality of possible dangers management is identified in project and completed upon development of risk management plan for the project. This plan determines the team of risk management, defines the persons role and responsibilities and files the index of evaluating identified risks.

### Recognition

The second phase involves the recognition of risks. In this phase the team members are gathered around each other and identify the possible risks and record them in the list of project risks. Risks may be presented in various forms as a production process, machinery usage, staffing, plan and budget and so on. They may also be resulted from the experience and the lessons learnt from the past projects.

### *Techniques to reinforce economic factors*

At the present conditions selling participation papers for collecting liquidity is necessary. But their benefit should be so that they have the necessary attraction for collecting liquidity. With the current benefit and time of income payment the demand for participation is not reasonable.

Getting competitive the income of investment deposits: At the current time and before lowering the rate of inflation no lowering the bank benefit should be considered. In addition, it is supposed that the benefit of long term deposits should be determined as competitive. Of course it is necessary that for 5 – year deposits a ceiling of 20% is determined and the banks be allowed to compete in domain of 20%.

Providing liquidity through public investments: Regarding the contractive policies and problems may occurred for small and middle firms using public liquidity with an agreed benefit between economic firms and people can return a part of the present liquidity to the cycle of production and the government can provide guarantee for this firms and make a confidence among private sections to operate this suggestion.

Cooperative and public investment with foreign investors: Government can provide a context in which the investors can take part in forming the economic big and small firms by providing any rate of their liquidity so that the liquidity can move toward the process of production.

### *Techniques for reinforcing operational factors*

- Continuous improvement and renewal of organization
- Helping the self – renewal of organization
- Directing the personal goals with the organization goals
- Training efficient groups
- Changing group and organizational culture

### Conclusion

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With respect to the analyses made, the strategic factors identified are as the following order:

- Making key and strategic decisions
- Evaluation and supervision of risk management

• Knowledge, mission and listing the strategies (operational strategies of risk management)

- Performing risk management

Respecting the analyses made, the productivity factors identified are as the following order:

- Proper productivity
- Paying attention to the organizational processes
- Applying proper model to improve the organization requirements

Respecting the analyses made, the management factors identified are as the following order:

- Being sure of making under the control and aware of the current and future risks
- Making sure of the stockholders and beneficiaries to manage the risk

Respecting to the analyses made, the relative benefit factors identified are as the following order:

- Permanent improvement of organization (through rewarding and encouraging)
- Achieving the organization goals
- Increase of innovations and initiatives

Respecting to the analyses made, the feasibility factors identified are as the following order:

- Effective use of resources
- Creating the motivation in workers and employees

Respecting to the analyses made, the operational factors identified are as the following order:

- Accurate accomplishment of the proper works
- Continuous improvement and renewal of the organization
- External events
- The best available information

With respect to the analyses made, the econom-



ic factors identified are as the following order :

- Improving the operational performance and increase of stockholders value
- Lowering potential losses resulted from the present risks

- Protection of assets and credits of company

Respecting to the analyses made, the time factors identified are as the following order :

- Lowering dangers resulted from risk
- Organizing the employees work hours
- Proper management for lowering the incident of danger

With respect to the analyses made, the place factors identified are as the following order:

- Lowering the costs from the view of place
- Proper place of supply and demand
- Establishing the relationship with the customers

Respecting to the analyses made, the legal factors identified are as the following order:

- Lowering the losses resulted from the crimes and imposed sanctions by the judicial authorities

- Corresponding with the legal obligations
- Paying attention to the legal factors
- Increasing the stockholders assets value

Hypotheses testing indicate that regarding the strategic factors and probability factors , it is possible to implement risk management in steel mill company.

### Suggestion for future research

Regarding the results of the present research, the following areas are suggested for further research:

1. Giving model for performing risk management in industrial factories
2. Giving practical techniques to empower the risk management in industrial factories
3. Comparative study of running risk management in different countries and giving a model for Iran
4. Studying the quality of managers and personnel cooperation in running the risk management well

### Limitation of the study

1. Making an excuse of managers for lack of responding to questionnaire and completing it
2. Lack of adequate resources and references
3. Lack of background for internal research
4. Lack of proper and clear definition of risk management and possibility of participation
5. Lack of information about the value of research for managers and employees
6. Lack of internal and external standard questionnaire
7. Lack of suitable participation of staff employees in answering to the questionnaire and completing it

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