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### Investigating the Impact of Economic Factors on the Occurrence of Accidents for workers Covered by the Social Security Organization in Mazandaran Province in 2011

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#### ABSTRACT

This study discusses the effects of monetary and financial issues on workers' occupational accidents. Monetary and financial issues include income, the financial liabilities, employment beyond repertoire, unfavorable dwelling, and low savings. Among the economic issues and factors, income, which is the main focus, affects other economic issues. Moreover, it causes other economic factors to be effective on occupational accidents. Labor is concerned about accidents and is constantly attempting to maintain health and safety, but money often causes accidents. For example, more and faster work is for receiving more wages. According to obtained results, the first hypothesis (workers' income), the second hypothesis (financial liabilities), the third hypothesis (employment beyond repertoire), the fifth hypothesis (low savings) were approved, but the fourth hypothesis (unfavorable dwelling) was rejected.

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## INTRODUCTION

Planning for securing human resources' health and protecting workers from risks in the industry are not only legal duty of management but also their human, moral and religious duty. The lack of attention to this important issues will cause human resource injuries and these injuries not only sometimes get workers to lose their health forever but also they also have community and their family face social and economic problems. In regard to socioeconomic impacts, it can be said that people are always facing different economic issues, workers also go on strike at times to increase wages.

Lack of understanding of economic issues might cause that workers never could reconcile their dreams with reality, and they would be deprived of its results. Effective and sufficient information about workers' economic concepts is both a condition of making social peace and a physical equilibrium condition of human resources. Observing costs of occupational accidents in several years shows that regardless of increased workers and inflation rate, these costs have increasing trend and some measures should be taken.

#### Definition of research topic:

This study discusses effects of monetary and financial issues of industry workers on occurrence of occupational accidents. Monetary and financial issues includes

1. workers' income,
2. financial liabilities,
3. employment beyond workers' repertoire,
4. undesirable dwelling,
5. low savings.

Among these factors, income is the main factor affecting other financial and monetary issues and all of the above factors are related to occupational accidents, but money often is the cause of accidents, for example faster and further work for more money. In all countries with any degree of industrial growth, harmful and horrible

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effects of occupational accidents compared with labor and material, spiritual wealth is so great that enacting laws and regulations is not enough to correct the health and protection affairs, but favorable economic conditions should be provided.

Reviewing previous studies indicates the impact of economic factors on the occurrence of occupational accidents and the necessity of measures to resolve the economic problems.

#### *Research goals:*

Generally, as the base of improvement and reconstruction in society is knowing related phenomena. Furthermore, it is necessary for fighting and resisting any harmful phenomenon to know it and then to find its contributing factors. Therefore, the occupational accidents are no exception. Any accident that occurs causes pain and distress to the injured person and his/her family and it is a informative lesson for future issues of workers and the prevention of similar incidents.

The objectives of this study are as follows:

1. Describing workers' accidents,
2. Expressing causes of workers' accidents,
3. Investigating the effect of the financial position on workers' accidents,
4. Investigating the effect of the financial liabilities on workers' accidents,
5. Investigating the effect of employment beyond workers' repertoire on workers' accidents,
6. Investigating the effect of unfavourable dwelling on workers' accidents,.
7. Investigating the effect of family's low savings on workers' accidents.

#### *Rationale:*

In developing countries, due to the lack of a balanced social and economic system and job safety culture and imported technology, occupational accidents damaged significant part of labor and they resulted in considerable economic losses.

In regard to the importance of economic factors, it can be said that people are always facing different economic issues, workers also go on strike at times to increase wages. Lack of understanding of economic issues might cause that workers never could reconcile their dreams with reality, and they would be deprived of its results. Effective and sufficient information about workers' economic concepts is both a condition of making social peace and a physical equilibrium condition of human resources.

In the case of occupational accidents, it should be noted that new discoveries and inventions exposed humans to more dangers. Observing the costs of occupational accidents in various years shows that regardless of increased labor and inflation rate, these costs have had increasing trend. This statistics indicates that many families and production units, where workers work, deal with mental problems. Employers must pay enormous money to social security organization for these accidents and many losses are incurred on community's economy.

Collecting statistics of occupational accidents and investigating its causes are positive step towards understanding the nature and consequences of adverse events and their causes. It is evident that such knowledge is an effective factor in preventing reoccurrence of these events in the future and contributing managers to make policy about prevention of occupational accidents.

#### *Research domain:*

1. The target group includes all workers, covered by social security organization of Ghaem Shahr and employed in various industries, who had an accident during work which led to taking them to the hospital.
2. The time of the study: Information obtained in 2011 are used in the study.
3. Concerned industries in this study:
  - a. textile industries,
  - b. sack weaving industries,
  - c. canning industries,
  - d. turning industries,
  - e. wood Industries,
  - f. paper industries,
  - g. miscellaneous industries.
4. effective factors of occupational accidents
  - a. economic factors.
  - b. technical and workplace factors,
  - c. Social and Cultural Factors,
  - d. mental factors,
5. economic factors including
  - a. income

- b. financial liabilities
- c. personal and family savings
- d. dwelling
- e. employment beyond repertoire

It is difficult to evaluate and distinguish the causes of work accidents, because for example, some economic factors may be related to social factors and a mixture of these factors may sometimes cause occupational accidents. Consequently, it is attempted that all the causes of occupational accidents to be identified and economic factors among them to be carefully examined.

#### *Research hypotheses:*

According to the relevant studies in line with the occurrence of unfortunate occupational accidents, useful experiences of researcher in this area, suspicion to resolve and improve problems which come along these accidents, we provided the following hypotheses:

1. Workers' income is effective on occurrence of undesirable occupational accidents (main hypothesis).
2. Workers' financial liabilities (willingly or unwillingly) is effective on intensifying occupational losses.
3. Workers' employment beyond repertoire within and outside workplace is effective on the occurrence of occupational accidents.
4. Workers' undesirable dwelling is effective on the occurrence of occupational accidents.
5. Workers' low savings is effective on the occurrence of occupational accidents.

#### *Literature review:*

The human race is born with working. When human being worked to meet their needs, in the line of working they have been exposed to dangers which caused accidents. Imagining damages inflicted to man hunting, gathering food, sheltering and etc. show antiquity of occupational accidents which can be considered work history or life history; That is mankind has been facing occupational accidents since the first day of creation, but these accidents has been various during different times and different places.

Department of statistics and studies of Social Security Organization (the Research Institute of social security) and the Ministry of Labor and Social Affairs have an annual release of occupational accidents analysis based on the reports of the work inspectors. Occupational accidents also can be observed in the academic resources and theses, such as research conducted at the Research Institute of Social Security Research, examining the relationship between economic and social fields about workers supported by the Social Security Organization in Tehran, 1991.

Taking a glance at social and economic profile of workers that is sample society in this research, we can conclude that these workers do not have desirable and favourable conditions in terms of socioeconomic indices. if we assume sample society as touchstone of our judgment to determine socioeconomic profile, we will come to the conclusion that the majority of workers in terms of social and economic indices have limitations, problems, and shortages such as illiteracy, immigration, low income, debt, disproportionate income to the cost of living, regarding most of these people are male, married, and according to socio-cultural profile of our society, responsible for providing for wife, children and other dependents. Economic indices play a more important role. In the obtained analysis of these indices related to accident, the results indicate that economic indices such as satisfaction with income, debt, proportionate income to the costs, amount of rent have more effective role in the occurrence of an accident than social indices.

#### *Testing research reliability and validity:*

##### *Reliability:*

To determine questions of the questionnaire reliability, advisor and supervisor, experts of Social Security Organization and Ministry of Labor and Social Affairs, and faculty research methods and statistics masters helped us.

##### *Validity:*

To determine validity of questions, Pearson correlation is estimated for a number of answers to the hypothesis questions. Computer software is used for the accuracy of the calculations. The initial questionnaire was designed and distributed among some of the participants, and then the final questionnaire was developed.

#### *Methodology (Analytical-descriptive):*

Descriptive and analytical methods have been used to conduct the research, and the experts and the statistical formulas are employed to examine the validity and reliability. Data collection methods is documentary and field methods, and questionnaires and interviews are used as research tools.

For descriptive and conclusive statistics, frequency distribution tables, graphs, means, percentage score, success rate, standard deviation; and for the significance of the hypothesis, qui-squared test and Pearson correlation coefficient were used.

*Statistical population:*

The statistical population in this research includes 80 workers victimized in occupational accidents in Qaem Shahr in 2012 who are covered by Social Security Organization.

*Data collection methods:*

*1. Field method (survey):*

One of the data collection methods was survey/field method executed in factories and workshops of Qaem shahr.

*2. Documentary method:*

One of the main steps involved in collecting data for doing any scientific research is the use of libraries. To investigate any subject, it must be studied whether books, articles, studies, theses, etc. have written about the subject or not. The main benefits of using library are as follows:

- A. Preliminary information about the topic,
- B. Making decision about who and what should be studied and what records are available,
- C. Taking advantage of experiences and avoiding frequent repetitions,
- D. Using available facts, statistics, books, references, and documents.

*Testing hypotheses:*

In order to display obtained data, frequency tables and pie chart were used. Furthermore, central indices of mean and sample mean and dispersion indices of variance and standard deviation were analyzed. T-test, Pearson correlation coefficient, and qui-squared test are used for examining hypotheses significance, the correlation between questions' answers, and not being random .

**The first hypothesis:** Workers' income is effective on the occurrence of undesirable occupational accidents.

$$T = \frac{\bar{X} - m}{S X / \sqrt{n}} = 6/228$$

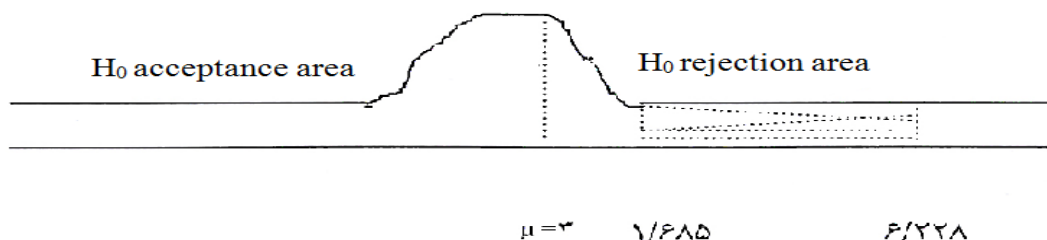


Figure 1 of T-student test

Table

Calculated

Considering the calculated t (6.228) is larger than the value of t table (1.685). The sample mean is larger than the mean of the statistical population. Therefore, the value of test statistics is in H<sub>0</sub> rejection area and H<sub>1</sub> assumption, in other words the first research hypothesis, is approved with 95% confidence and probability of 5% error. According to the analysis of the statistical sample in statistical population, the first hypothesis was also accepted.

**The second hypothesis:** Workers' financial liabilities is effective on intensifying occupational losses.

$$T = \frac{\bar{X} - \mu}{S X / \sqrt{n}} = 6/228$$

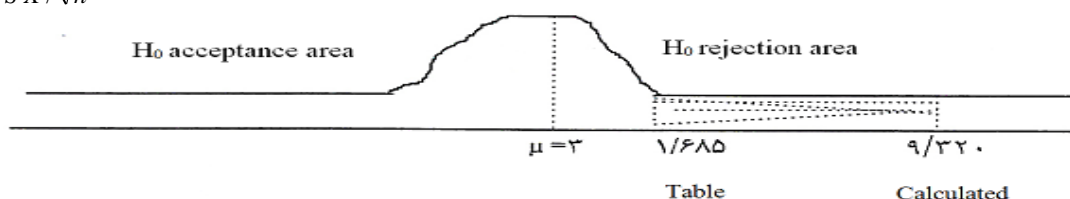


Figure 2 of T-student test

Table

Calculated

Considering the calculated t (9.320) is larger than the value of t table (1.685). The sample mean is also larger than the mean of the statistical population. Therefore, the value of test statistics is in  $H_0$  rejection area and  $H_1$  assumption, in other words the second research hypothesis, is approved with 95% confidence and probability of 5% error. According to the analysis of the statistical sample in statistical population, the second hypothesis was also accepted.

**The third hypothesis:** Workers' employment beyond repertoire is effective on the occurrence of occupational accidents.

$$T = \frac{\bar{X} - \mu}{S_x / \sqrt{n}} = 10.882$$

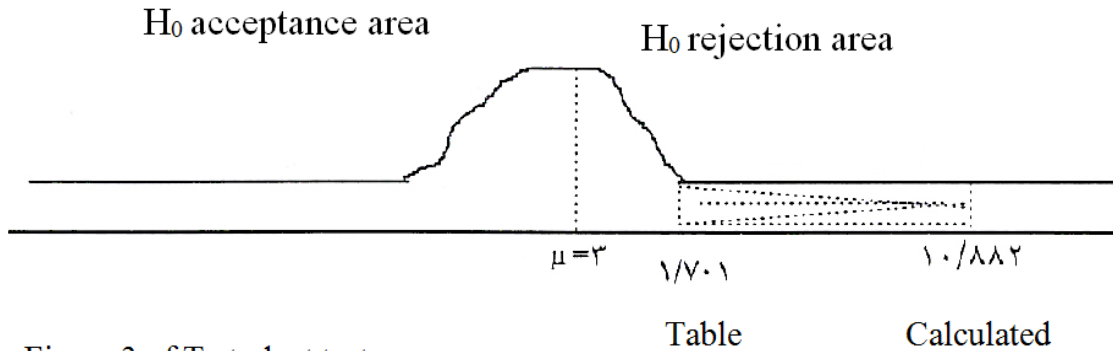


Figure 3 of T-student test

Considering the calculated t (10.882) is larger than the value of t table (1.701). The sample mean is also larger than the mean of the statistical population. Therefore, the value of test statistics is in  $H_0$  rejection area and  $H_1$  assumption, in other words the third research hypothesis, is approved with 95% confidence and probability of 5% error. According to the analysis of the statistical sample in statistical population, the third hypothesis was also accepted.

**The fourth hypothesis:** Workers' undesirable dwelling is effective on the occurrence of occupational accidents.

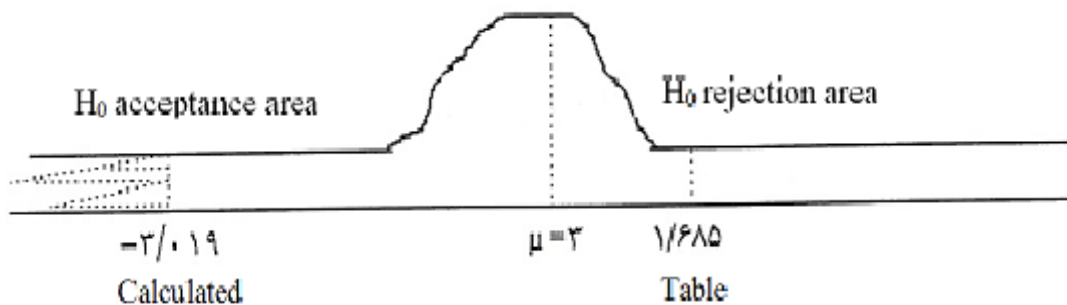


Figure 4 of T-student test

Considering the calculated t (-3.019) is smaller than the value of t table (1.701). The sample mean is also smaller than the mean of the statistical population. Therefore, the value of test statistics is in  $H_0$  acceptance area and  $H_1$  assumption, in other words the fourth research hypothesis, is rejected. According to the analysis of the statistical sample in statistical population, the fourth hypothesis was also rejected.

**The fifth hypothesis:** Workers' low savings is effective on the occurrence of occupational accidents.

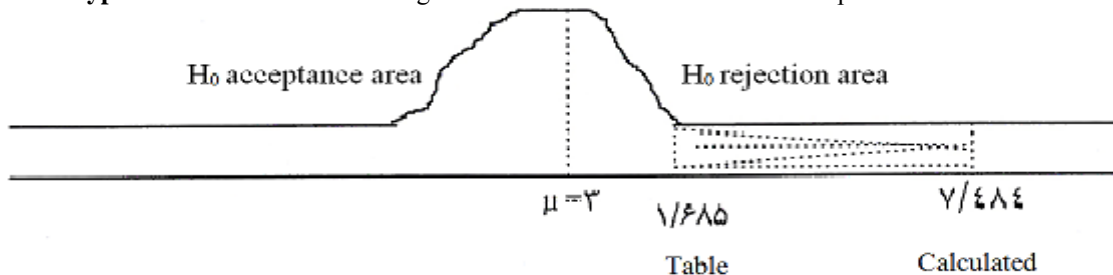


Figure 5 of T-student test

Considering the calculated t (7.484) is larger than the value of t table (1.685). The sample mean is also larger than the mean of the statistical population. Therefore, the value of test statistics is in  $H_0$  rejection area and  $H_1$  assumption, in other words the fifth research hypothesis, is approved with 95% confidence and probability of

5% error. According to the analysis of the statistical sample in statistical population, the fifth hypothesis was also accepted.

#### *Conclusion:*

The statistical analyses indicated that the first, second, third, fifth assumption has been confirmed with high scores and success rates. Considering the correlation coefficients between answers and chi-squared calculation, there was a correlation. among answers. the answers were not random.

#### *Research Results:*

##### *First hypothesis:*

According to low wage and income, inproportionate income to the costs, irregular payment of wage and income, inequity of wages and income, the first hypothesis is approved. Therefore, workers' income is effective on the occurence of undesireable occupational accidents.

##### *Second hypothesis:*

Regarding high debt, debt for resolving life's necessary needs, debts to banks, debts to individuals, the second hypothesis is approved. Therefore, Workers' financial liabilities is effective on intensifying occupational losses.

##### *Third hypothesis:*

Regarding financial problems is the reason of second employment and problems rising from the second employment such as tiredness, the third hypothesis is approved. Therefore, Workers' employment beyond repertoire within and outside workplace is effective on the occurence of occupational accidents.

##### *Fourth hypothesis:*

Regarding desireable dwelling, nearness to workplace, having enough rooms in dwelling, and rent, the fourth is rejected. Therefore, Workers' undesirable dwelling is not effective on the occurence of occupational accidents.

##### *Fifth hypothesis:*

According to research results, the fifth hypothesis is approved. Therefore, Workers' low savings is effective on the occurence of occupational accidents.

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