

## **An analysis of the psychological anxiety factors of construction workers**

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### **Abstract**

The construction industry is labor-intensive, which means that productivity hinges greatly on the laborer's competence. However, if the construction workers perform their tasks in a state of psychological insecurity, productivity will fall and safety management will also be affected; for this reason, a factor analysis is needed. Therefore, this study aims to analyze particular situation factors that cause psychological anxiety to construction workers. To deduce these factors, a questionnaire survey was conducted. Through this study, it was found that the working environment has the greatest influence on psychological anxiety, and that the situation in which an opening is neglected due to loading and unloading materials was identified as a leading psychological factor of anxiety.

*Keywords: Construction workers, Safety psychology, Safety management*

### **Introduction**

The construction industry has a high dependence on labor, and its safety management and work efficiency are greatly affected by construction workers' competence[1]. However, construction workers can feel psychologically anxious in particular situations due to the danger of construction work, the complexity of processes and their use of new technologies[2]. As the psychological anxiety of construction workers can be a safety accident factor, a solution needs to be presented through a quantitative analysis[3]. For this reason, particular situational factors that trigger psychological anxiety should be identified. The preventive principle for disasters was applied to the psychological anxiety factors. This study was limited to identifying the psychological factors of construction workers that could cause a safety accident.

### **Concept of anxiety**

Freud(1993) said that anxiety is a synonym for fear. However, there is a difference between fear and anxiety, in that fear is a feeling of being afraid of

something in the outside world, but anxiety is a feeling of being afraid of an internal danger, yet feels the same as the external fear. Based on this theory, anxiety related to internal (personal defect) or external (environmental) factors trigger anxious behaviors by construction workers at work in a particular situation[4].

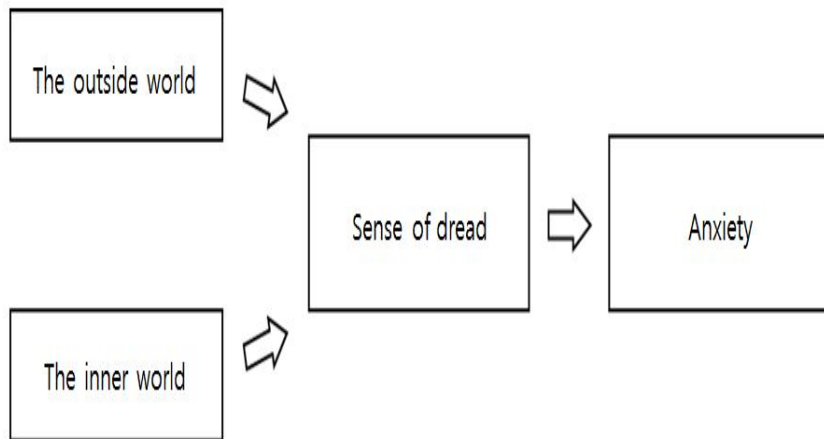


Table 1. Freud's psychosocial theory

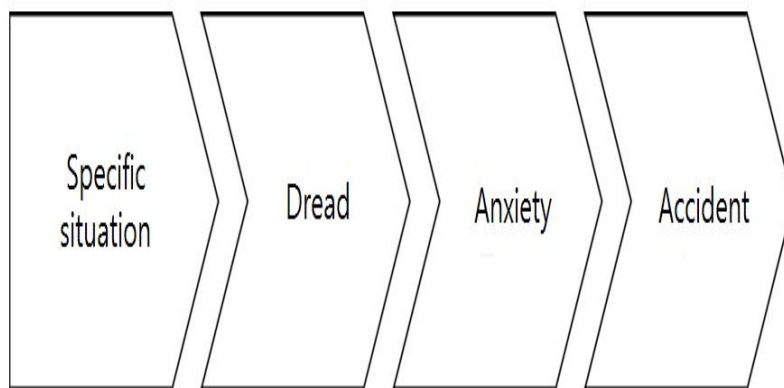


Figure 2. Thinking flow in the application of Freud's theory

Heinrich's domino theory claims that one goes through 5 steps to reach a disaster. Therefore, when a construction worker feels anxious at each step, this accelerates a disaster. Based on this thought, a safety disaster can be prevented by removing the anxiety factors of construction workers at each step by taking an approach to the environmental factors[5].

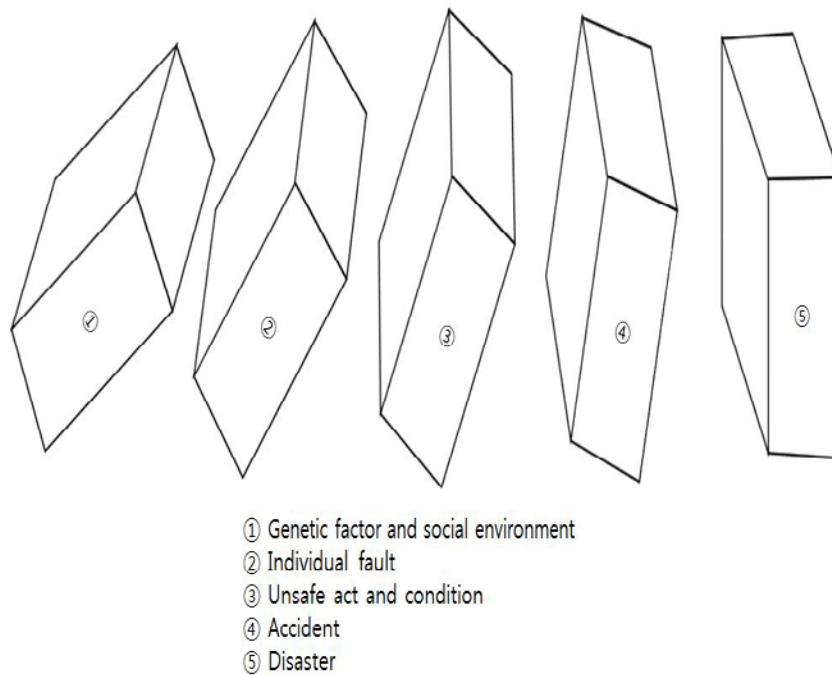


Figure 3. Heinrich's domino theory

### Psychological analysis of construction workers

A critical factor in the construction industry is that young workers are trying to avoid construction work, and that skilled workers are becoming aged, while the number of foreign workers has been increasing. The changes in the manpower structure have a psychological impact on construction workers. The results of the survey of the current psychology of construction workers are as follows.

Table 1. Importance of psychological factors

Importance	Psychological factor	Average
1	Working environment	3.69

2	Responsibility	3.45
3	Feeling of affiliation	3.41
4	Achievement	3.33
5	Satisfaction	3.33
6	Possibility of growth	3.18
7	Equal opportunity of promotion	2.94

The most influential factor on psychology was found to be the working environment. Therefore, if the working environment is improved, this has a direct impact on the safety motivation, safety knowledge, stress reaction, and organizational immersion, which results in relieving the anxiety of construction workers.

### **Analysis of psychological anxiety factors of construction workers**

To examine the situations in which construction workers feel anxious, a questionnaire survey was conducted. 132 construction workers in Suwon, Korea were surveyed, and 86 effective questionnaires were collected and analyzed. A 5-point Likert scale was used to evaluate the importance of the factors through average. The results are indicated in the table below.

Table 2. Importance of psychological anxiety factors of construction workers

	<b>Questions</b>	<b>Average point</b>
1.	When the opening is neglected due to loading and unloading	3.56
2.	When the work involves a material that is hazardous to the human body	3.30
3.	When the working process is not appropriate	3.26
4.	When one must make a detour due to materials stacked in the working path	3.19
5.	When the work should be done within a set period of time	3.16
6.	When the equipment needed for a work is obsolete	3.05
7.	When a working path is poor and dangerous	2.93
8.	When noise is louder in a job where cooperation is	2.63

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	needed	
9.	When noise prevents smooth communication at work	2.53
10.	When materials should be transported through communication by more than 2 people	2.52
11.	When materials beyond one's capacity should be transported by oneself	2.49
12.	When the work should be done for completion after disassembling the safety facilities	2.47
13.	When the materials should be loaded and unloaded upon the manager's instruction	2.44
14.	When the work is done in a place where no light is coming in.	2.23
15.	When the work is done at a height of 2m or higher	1.93

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When an opening is neglected due to the loading and unloading got an average of 3.56, the highest in points, followed by work with material that is hazardous to the human body(3.30), and inappropriate working process(3.26). The factors with an average of 3 points or above from 1 through 6 can be considered as making construction workers more anxious compared with the other factors. Therefore, construction managers need to improve these factors more than the other situational factors.

### **Conclusion**

In this study, the psychological anxiety factors were derived. It appears that the working environment can have a significant influence on the psychology of construction workers. In addition, construction workers feel anxious in situations in which an opening is neglected due to loading and unloading. Therefore, prioritized management is required. However, this study is limited in that only the psychological anxiety factors of construction workers were derived and analyzed. In conclusion, concrete plans to manage each factor should be studied in the future.

### **Acknowledgement**

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