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Research Article

Hazards and Risks Investigation of the Fit Out Project of RMM Construction: Basis for Creation of an Occupational Construction and Health and Safety Program

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ABSTRACT

The existence of hazards and risks in businesses is inevitable, specifically, in the construction industry. The research is qualitative by nature which aimed the identification and investigation of the actual hazards and risks in the workplace as experienced by the select construction workers as main participants in the research. A total of eleven (11) constructions workers were utilized in the research and selected by way of purposive sampling. During the focus discussions, participants are divided into three groups. Among others, results revealed the following construction-related hazards: Scattered Broken Tiles, Unstable Scaffolding, Scattered Nails, Insufficient Lightning, Exposed Extension Wire and Chiselling and Grinding, No Insulation and Physical Transport of Heavy materials. The research further investigated the level of risks in the identified hazard using the probability and severity matrix. At average, the identified risks obtained a high level of probability while severity at average is to medium or moderate only. Occupational Construction and Health and Safety Program was developed based on the results of this research.

Keywords*: Hazards, Perils, Probability, Risks, Severity*

Introduction

The risk management concept of the study is the application of the basic management functions of planning, leading, and organizing and control, (Indeed Career Guide, 2023). According to KEN Institute of Executive Learning (2023), hazard is the potential to cause harm while risk on the other hand is the likelihood of harm. This literature is significant to the study because it defines that hazard is something that might cause harm or injury or even death to others while risk is the likelihood of harm. It is in this context that the study should be pursued in order to prevent, minimize and mitigate harm and injuries in the workplace.

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Department Order 13 Series of 1998 of the Department of Labor and Employment, Bureau of Working Condition, *"Guidelines Governing Occupational Safety and Health In the Construction Industry*" defined the meaning of imminent danger and according to this government institution, the imminent danger means a condition or practice that could reasonably be expected to cause death or serious physical harm before abatement under the normal enforcement procedures can be accomplished.

This government order is significant to the study because non-compliance to this standard or policy is a ground for violation by any legitimate contractors in the construction industry. The severity or degree of offense may even result to the revocation of the contractor's license.

Methods

The study utilized qualitative design which is descriptive in nature. Qualitatively, the study determined the significant experiences of the select participants with regards to the risks and hazards in a construction company.

Sample and Sampling

A total of eleven (11) co-researchers were utilized in the study and selected by way of

Research Instrument

Guide questions focusing on the construction-related risk were prepared and participants are subjected to a focus group discussions and exploratory interview to which participants are divided into three groups.

Result and Discussion

Hazards Identified in the Fit-out Construction by Participants

Table 1. Summary of Hazards Identified from 1st Group of Participants

	Hazards
1	Nagkakalat ng basag ng tiles (Scattering of broken/dilapidated tiles)
2	Hindi matatag na "scaffolding" (Unstable scaffolding).
3	Kalat na mga pako (Scattered nails)
4	Nagtratrabaho sa madilim na lugar (Insufficient Lighting while working)
5	Mahabang kable na walang insulasyon (Exposed extension wire).
6	Pagsinsil at pag-"grinding" (Chiselling at grinding works)

Results revealed that, there are six hazards experienced by the 1st group of participants as shown in Table No. 1. These hazards are experienced by participants who work for the company as Foreman, Utility man, painter and warehouse/inventory keeper. It can further be interpreted as hazards that are directly associated with nature of work of the select co-researchers. Likewise, these hazards arise by virtue of human activities. As mentioned by Sidiq, M & Rohman, M (2023), human error remains a significant contributor to construction accidents, highlighting the importance of human factors in construction safety management.

Table 2. Summary of Hazards Identified from 2nd Group of Participants

	Hazards
1	Pagka-"grinding" -nasugatan ang mga mata dahil sa lumilipad ng butil. (Eye injury due to flying particles)

	Hazards
2	Hindi matatag na "scaffolding" (Unstable scaffolding).
3	Walang isulation ang kable-nakuryente-na-trauma (No cable insulation that can cause of electrocution – shock)
4	Paggamit ng acetylene dahil sa pagsabog (Deteriorated valves and rubber hose of the oxy-acetylene equipment)
5	Nagkakalat ng basag ng tiles (Scattered defective/broken tiles)
6	Naka-usling na pako – sugat sa paa dahil sa tusok ng pako (Protruding nails causing feet injury)

Results revealed also that there are six hazards experienced by the 2nd group of participants as shown in Table No. 2. These hazards are experienced by participants who work for the company as Mason, Utility man and warehouse/inventory keeper. Likewise, these hazards that are directly associated with nature of work of the select co-researchers. Sanni-Anibire, M et al (2020) mentioned that the construction industry is one of the most dangerous industries worldwide due to deadly fatalities and accidents recorded yearly. Supported by Cai, Y et al (2022), the construction industry has a high incidence of safety accidents and to reduce the incidence of safety accidents and avoid the high casualty rate, safety accidents and safety training methods should be implemented.

Table 3. Summary of Hazards Identified from 3rd Group of Participants

	Hazards
1	Paggamit ng "Ladder"" – putok ang ulo dahil sa pagkahulog. (Use of Ladder – head injury due to slip and fall)
2	Amoy ng pintura - sakit sa baga dahil sa masangsang na amoy sa kapaligiran (Smell of paint – respiratory ailment due to airborn contaimination)
3	Walang insulasyon na kable sa basang lugar – nakuryente (Exposed electrical cable in wet place –electrocution)
4	Paggamit ng liha - sakit sa baga dahil sa paglanghap ng maliliit na butil ng liha sa kapaligiran. (Use of sand paper - respiratory ailment due to airborn contaimination)
5	Pagbuhat ng lata ng pintura – bali ang buto dahil sa maling paraan ng pagbuhat). (Lifting and transport of paint cans – back injury due to improper lifting of load)
6	Pagtulay sa "Scaffolding"" – putok ang ulo dahil sa pagkahulog) (Walking on scaffolding - head injury due to slip and fall)

Lastly, table 3 shows the hazards experienced by the select participants. Results revealed that there were also six hazards experienced by the participants based on the nature of their work as Foreman, Carpentry, Utility man and Painter.

Table 4. Summary of Identified Hazards in the Fit-out Construction Company

	Hazards
1	Eye injury due to flying particles
2	Unstable scaffolding _ Slip and Fall
3	No cable insulation that can cause of electrocution – shock
4	Deteriorated valves and rubber hose of the oxy-acetylene equipment - explosion
5	Scattered defective/broken tiles – cut / laceration
6	Protruding nails causing foot injury

	Hazards
7	Use of ladder – head injury due to slip and fall
8	Smell of paint – respiratory ailment due to airborne contaminants.
9	Exposed electrical cable in wet place –electrocution
10	Use of sand paper - respiratory ailment due to airborne contaminants.
11	Scattered nails – cut/lacerations
12	Insufficient lighting while working – blindness / eye ailment
13	Lifting and transport of paint cans – back injury due to improper lifting of load
14	Chisel and grinding works – eye injury

Results revealed the summary of hazards as experienced by the select co-researchers as shown in Table No. 4. All of these hazards are present in Construction Company as a result of direct association with the nature of their operation.

Risks Severity and Probability Matrix

Results revealed the risks level based on the probability and severity matrix as shown in the table no. 5.

Table 5. Summary of Risks Severity and Probability Assessment

Hazards	Risks Level	
	Probability	**Severity**
Eye injury due to flying particles	Medium Level	Low Level
Unstable scaffolding _ Slip and Fall	High Level	Medium level
No cable insulation that can cause of electrocution – shock	Medium Level	Low Level
Deteriorated valves and rubber hose of the oxy-acetylene equipment - explosion	Low Level	Low Level
Scattered defective/broken tiles – cut / laceration	High Level	Low Level
Protruding nails causing foot injury	Low Level	High Level
Use of ladder – head injury due to slip and fall	Medium Level	Low Level
Smell of paint – respiratory ailment due to airborne contaminants.	High Level	Medium Level
Exposed electrical cable in wet place –electrocution	Low Level	Low Level
Use of sand paper - respiratory ailment due to airborne contaminants.	Medium Level	Low Level
Scattered nails (cut/lacerations)	Medium Level	Medium Level
Insufficient lighting while working – blindness / eye ailment	High Level	Medium Level
Lifting and transport of paint cans – back injury due to improper lifting of load	Low Level	Low Level
Chisel and grinding works – eye injury	High Level	Medium Level

Results revealed that, the probability of the identified hazards to occur is at low to medium level while the severity of the detrimental effect of the hazards is at average of low level.

Conclusion

Hazards and Risks are directly related to one another as shown in the result of study. Based on the results, the identified hazards by the co-researchers are those directly related with the nature of operation of a construction company and with the nature of their individual work. In terms of risks occurrence and its effect, these hazards are those with low level detrimental effect, however, the probability of occurrence is at low to medium level.

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