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Impact of Demographics and Certifications on Awareness of Safety Management Practices

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***Abstract:** This research work primarily contributes to determining the findings through the Role of human resource management to ensure occupational health and safety system in the construction industry in Tata Housing Development and Construction Division, Gurgaon for ensuring the aspects of safety management. Just because HR is part of an organization's management team doesn't imply it doesn't play a vital role in employee advocacy. This is especially true when employees raise concerns about their health and safety, or when management try to cut corners, conceal dangers, or neglect to disclose workplace incidents in the construction business. The goal of this research is to provide a human asset management viewpoint on the occupational health and safety management framework.*

I. INTRODUCTION

Among the fastest growing areas in the field of safety are those associated with the building industry, which include assembly through, item safety, programming, ecological security, substance process safety, and framework safety. As more safety professionals become available, there will be a greater demand for their abilities to study and comprehend these innovations in order to ensure that safety requirements are satisfied. As open acquaintance with hazard exposures grows and more entangled buyer products enter the building industry, safety specialists will be approached to fight against injury, disease, or occupational health difficulties. More organisations are forming safety committees and using safety management systems to ensure a safe workplace. Individuals must take personal responsibility for workplace safety and health concerns. They must comprehend that individuals contribute to the problem and, as a result, they may be the solution. The investigation of behaviour, with a focus on both hazardous and safe activities, is necessary for the continuous improvement of a safety programme.

The safety specialists must be trained, prepared, and involved in a standard assembly of all OHS information. Material science, physiology, insights, mathematics, software engineering, designing mechanics, contemporary procedures, business, communication, and brain science are all required by safety specialists. Mechanical cleanliness and toxicology, design of building peril controls, fire assurance, ergonomics, framework and procedure, safety project administration, mishap examination and investigation, item safety, construction safety, instruction and preparing systems, estimation of safety execution, ecological safety, and natural laws, regulations, and standards are all examples of effective safety studies. Many safety specialists have foundations of safety study in many controls, such as administration and construction organisation, building, training, physical and sociologies, and various domains.

II. LITERATURE REVIEW

Almen et al. (2012) revealed that construction workers are frequently exposed to a high risk of getting harmed on the job owing to a variety of unusual risk-taking behaviours.

According to Pungvongsanuraks et al. (2010), the construction industry is unique and complex when compared to other enterprises, and it includes a wide range of development materials and items, building services, manufacturers, contractual workers, sub-temporary workers, operation service people, and repair services.

According to Berg (1999), the principal cause of passing in building across the world is distinctive falls. According to Berg, the incidence of deaths from falls on German construction sites accounts for half of all fatalities in the construction industry. Identifying a link to the Occupational Health and Safety Management System, adequacy–Objective, and safety execution in the construction sector for stall mishap.

Wurzelbacher and Jin (2011) investigated the implementation of Worker Occupational Health and Safety. A Spanish organisation acknowledged that the construction worker and the work must be prioritised in terms of OH&S. "Avoidance exercise creative measures" "Concentrated usage of value management equipment" The "empowerment of professionals" is one of the most important factors that contribute to a reduction in the number of wounds in the construction industry.

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Bibha Mahto, Mohd. Aqleem Mir (2015) The construction industry is regarded as one of the most perilous modern sectors, with development professionals being more prone to disasters. Despite recent efforts to improve site security, construction still reports an imbalanced proportion of job-related deaths. In emerging or established countries, there is a stringent legal necessity for safety precautions in the construction industry, as well as the use of occupational health and safety administration frameworks that are meant to reduce or eliminate catastrophes at work sites.

Sajani Jayasuriya, Kanchana Priyadarshani, Gayani Karunasena, and Kanchana Priyadarshani (2013) Because of the nature of the construction industry, construction security on project sites is of the utmost importance. Regardless, it is typically an optional issue in a market-driven culture where the primary concern is accomplishing undertakings at the essential quality with the least amount of time and money. In this sense, security concerns are considered as simply following a mishap at a construction site with development efforts to improve working conditions, particularly in developing countries.

According to Mohd Saidin Misnan and Abdul Hakim Mohammed (2007), the concept of most mishaps at construction sites suggests that the building industry is unique. Human behaviour, various development localities, the problems of works, hazardous construction society, dangerous hardware and gear being used, and resistance to the various established methodology are all factors involved. According to research, a catastrophe and damage on the jobsite are typically the result of experts' behaviour, work procedures, or conduct and work culture. Construction and construction society are more closely associated with labourers' construction practises. A competent building administration framework need to be centred on security consciousness, which ought to end up evidently a culture in the development company encompassing all groupings. The efficient construction culture and security administration framework should be made known to the overall populace, as well as solid and construction in the ecological esteem business.

III. RESPONDENTS' AWARENESS FOR DETERMINANTS OFSAFETY MANAGEMENT PRACTICES

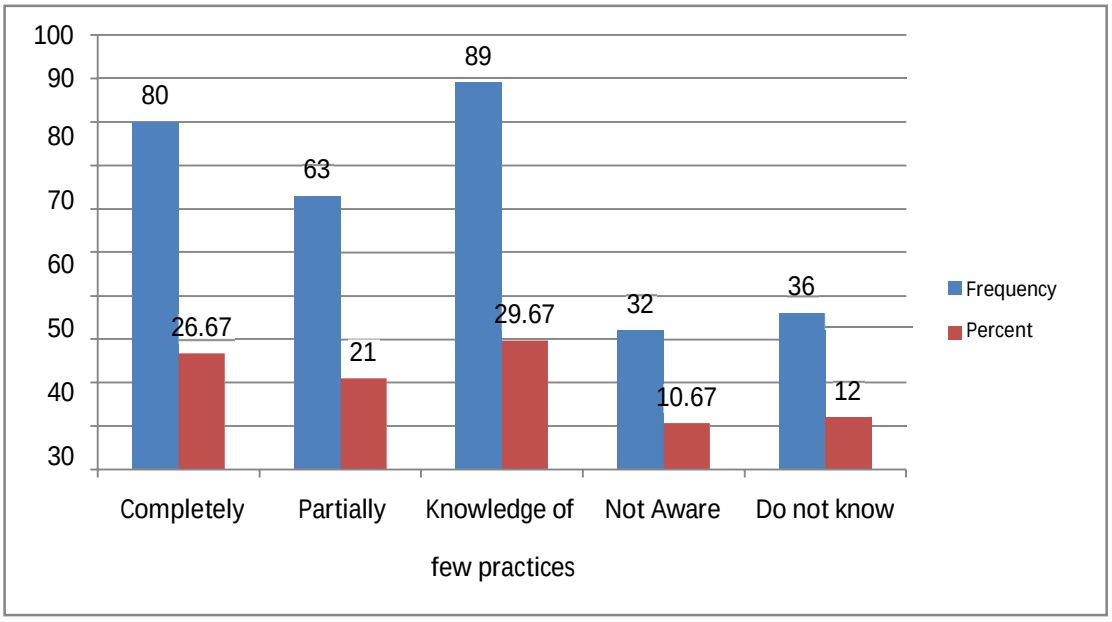
This portion of the article reveals the level of knowledge of respondents from all three sampled construction businesses regarding the factors of safety management measures applied by their companies' administration. The question used to measure respondents' degree of awareness about the determinants of safety management procedures at their construction firm categorises their responses into five categories: entirely aware, slightly aware, knowledge of a few practises only, not aware, and do not know about. The amount of respondents who fell into each group was shown using frequency distribution analysis.

Table 1 Frequency Distribution Of Respondents' Awareness For Determinants OfSafety Management Practice

Qualification Level		Frequency	Percent	VP	CP
Valid	Completely Aware	80	26.67	26.67	26.67
	Partially Aware	63	21.00	21.00	47.67
	Knowledge of few practices only	89	29.67	29.67	77.33
	Not Aware	32	10.67	10.67	88
	Do not know	36	12.00	12.00	100
	Total	300	100.0	100.0	

Source: Primary Data (VP-Valid Percent, CP – Cumulative Percent)

FIG 1: Respondents'Awareness for Determinants of Safety Management Practice



The frequency distribution table (Table 1) and figure (Fig 1) of respondents' awareness for determinants of safety management practise presented above revealed that 80 (26.67 percent) respondents were completely aware of their organization's OHS policies and practises, 63 (21.00 percent) respondents were partially aware, 89 (29.67 percent) respondents had knowledge of few OHS practises, 32 (10.67 percent) respondents were not aware of OHS, and the remaining 36 respondents were not aware of OHS.

IV. IMPACT OF DEMOGRAPHICS ON AWARENESS OF SAFETYMANAGEMENT PRACTICES

The purpose of this portion of the article is to examine the impact of demographic variables on their degree of awareness regarding the determinants of safety management practises. To examine the significance of the effect of gender, qualification, and job category as demographic characteristics on the level of awareness of determinants of safety management practises, the following hypotheses were developed under the auspices of hypothesis four, which states that there is no significant relationship between demographic characteristics and level of awareness of determinants of safety management practises.

H_{01}: The level of awareness concerning the factors of safety management techniques is unaffected by gender.

H_{a1}: Gender influences the level of awareness for the factors of safety management methods greatly.

H_{02}: The level of awareness about the determinants of safety management procedures is unaffected by academic qualification.

H_{a2}: The degree of awareness regarding the determinants of safety management procedures is highly influenced by academic qualification.

H_{03}: The level of awareness about the determinants of safety management procedures is unaffected by job category.

H_{a3}: The degree of awareness regarding the determinants of safety management procedures is greatly affected by job type.

One way analysis of variance statistical methods were used to compare the mean difference in order to prove the relevance of the influence of demographic variables on the degree of awareness for the determinants of safety management practises as provided in the above hypotheses.

Table 2: ANOVA test statistics of Gender effect on awareness of determinants of safety management practices

Effect on Awareness of Determinants of Safety Management Practices					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.126	1	.126	.517	.473
Within Groups	109.332	298	.244		
Total	109.458	299			

ANOVA test statistics of gender effect on awareness of determinants of safety management practises, as shown in Table 2, revealed an insignificant difference (F =.517, Sig. =.473) between male and female respondents' level of awareness for their organization's determinants of safety management practises. As a result, it can be concluded that gender, as a demographic component, has no major impact on the organization's awareness and understanding of occupational health and safety procedures for the purpose of workers' health and safety. As a result, it was determined that H01 should be accepted, confirming that gender has no effect on the degree of awareness for the determinants of safety management procedures.

Table 3 ANOVA test statistics of Academic Qualification effect on awarenessof determinants of safety management practices

Effect on Awareness of Determinants of Safety Management Practices					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12.351	3	4.117	18.908	.000
Within Groups	97.107	296	.218		
Total	109.458	299			

Table 4: LSD - Multiple Comparisons between academic qualification groups

Multiple Comparisons						
Dependent Variable: Effect on Awareness of Determinants of Safety Management Practices						
LSD						
(I) Academic Qualification	(J) AcademicQualification	Mean Difference(I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Below Secondary	Senior Secondary	-.47229*	.07430	.000	-.6183	-.3263
	Graduation	-.52262*	.08130	.000	-.6824	-.3628
	Other Higher Qualification	-.61184*	.08603	.000	-.7809	-.4428
Senior Secondary	Below Secondary	.47229*	.07430	.000	.3263	.6183
	Graduation	-.05033	.05531	.363	-.1590	.0584
	Other Higher Qualification	-.13956*	.06205	.025	-.2615	-.0176
Graduation	Below Secondary	.52262*	.08130	.000	.3628	.6824
	Senior Secondary	.05033	.05531	.363	-.0584	.1590
	Other Higher Qualification	-.08922	.07027	.205	-.2273	.0489
Other Higher Qualification	Below Secondary	.61184*	.08603	.000	.4428	.7809
	Senior Secondary	.13956*	.06205	.025	.0176	.2615
	Graduation	.08922	.07027	.205	-.0489	.2273
*. The mean difference is significant at the 0.05 level.						

The ANOVA test statistics of Academic Qualification effect on awareness of determinants of safety management practises in Table 3 revealed that there is a significant difference (F = 18.908, Sig. =.000) between the respondents' level of awareness for the determinants of safety management practises in their organisation based on their academic qualification status. As a result, it is possible to conclude that academic qualification has a substantial impact on an organization's degree of awareness for the determinants of safety management procedures.

Table 4 offered various comparisons between academic qualification groups, which aids in recognising the importance of differences between groups (Below Secondary, Senior Secondary, Graduation and Other Higher Qualification). Multiple comparisons revealed that, with the exception of the insignificant difference in mean values of the Senior Secondary and Graduation group (.363) and other higher qualification and Graduation (.205), all intergroup differences were significant for all other remaining academic qualification groups. As a result, it was determined that Ha2 must be recognised, confirming that academic education has a considerable impact on the level of awareness for the determinants of safety management practises.

Table 5: ANOVA test statistics of Job Category effect on awareness of determinants of safety management practices

Effect on Awareness of Determinants of Safety Management Practices					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.761	2	2.881	12.417	.000
Within Groups	103.697	297	.232		
Total	109.458	299			

Table 6: LSD - Multiple Comparisons between job category groups

Multiple Comparisons						
Dependent Variable: Effect on Awareness of Determinants of Safety Management Practices						
LSD						
(I) Job Category	(J) Job Category	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Supervisor	Workman	.23021*	.04790	.000	.1361	.3243
	Contractor	.20689*	.08176	.012	.0462	.3676
Workman	Supervisor	-.23021*	.04790	.000	-.3243	-.1361
	Contractor	-.02332	.08322	.779	-.1869	.1402
Contractor	Supervisor	-.20689*	.08176	.012	-.3676	-.0462
	Workman	.02332	.08322	.779	-.1402	.1869
*. The mean difference is significant at the 0.05 level.						

The ANOVA test statistics of job category effect on awareness of determinants of safety management practises presented in Table 5 revealed that there is a significant difference (F = 12.417, Sig. =.000) between the respondents' level of awareness for their organization's determinants of safety management practises according to their job category. As a result, it is possible to deduce that the respondents' work type or category affects their degree of awareness regarding the determinants of safety management procedures. Table 6 offered many comparisons between the groups, which aids in recognising the importance of differences between them. The significant column value revealed that, with the exception of the mean difference between workman and contractor (.779), all other intragroup mean value comparisons revealed a significant difference.

As a result, it was determined that Ha3 must be accepted, confirming that Job Category has a considerable impact on the degree of awareness for the determinants of safety management procedures.

Table 7: Status of Hypotheses established to examine the effect of demographic characteristics of respondents on their level of awareness for determinants of safety management practices

Hypothesis	Type	Status
H_{01}: Gender does not affect the level of awareness for the determinants of safety management practices.	Null	Accepted
H_{a2}: Academic qualification significantly affects the level of awareness for the determinants of safety management practices.	Alternate	Accepted
H_{a3}: Job category significantly affects the level of awareness for the determinants of safety management practices.	Alternate	Accepted

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V. IMPACT OF CERTIFICATIONS ON AWARENESS OF SAFETYMANAGEMENT PRACTICES

This portion of the article evaluates the influence of certification such as OHSAS, ISRS, and ISO on the organization's degree of awareness regarding the determinants of safety management procedures. For the objective of determining the relevance of the link between safety certifications and degree of awareness as factors of safety management practises, the following hypothesis was developed:

H_{04}: For the determinants of safety management practises, there is no substantial association between safety certificates and degree of awareness.

H_{a4}: There is a strong correlation between safety certifications and the level of understanding of the determinants of safety management procedures.

To examine the significance of the association for the above-mentioned hypothesis, analysis of variance and LSD - Multiple Comparisons were used. The certification kinds (Non Certified, OHSAS, ISRS, and ISO) and the level of knowledge about the determinants of safety management practises are participating factors, and both are included in section b of the questionnaire.

Table 8: ANOVA test statistics of certifications effect on awareness ofdeterminants of safety management practices

Effect on Awareness of Determinants of Safety Management Practices					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3.378	3	1.126	4.734	.003
Within Groups	106.080	296	.238		
Total	109.458	299			

Table 9: LSD - Multiple Comparisons between certification groups

Multiple Comparisons						
Dependent Variable: Effect on Awareness of Determinants of Safety Management Practices						
LSD						
(I) Certification Type	(J) CertificationType	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Non Certified	OHSAS	-.08000	.05631	.156	-.1907	.0307
	ISRS	.20000*	.07964	.012	.0435	.3565
	ISO	-.08000	.06296	.205	-.2037	.0437
OHSAS	Non Certified	.08000	.05631	.156	-.0307	.1907
	ISRS	.28000*	.07964	.000	.1235	.4365
	ISO	.00000	.06296	1.000	-.1237	.1237
ISRS	Non Certified	-.20000*	.07964	.012	-.3565	-.0435
	OHSAS	-.28000*	.07964	.000	-.4365	-.1235
	ISO	-.28000*	.08447	.001	-.4460	-.1140
ISO	Non Certified	.08000	.06296	.205	-.0437	.2037
	OHSAS	.00000	.06296	1.000	-.1237	.1237
	ISRS	.28000*	.08447	.001	.1140	.4460
*. The mean difference is significant at the 0.05 level.						

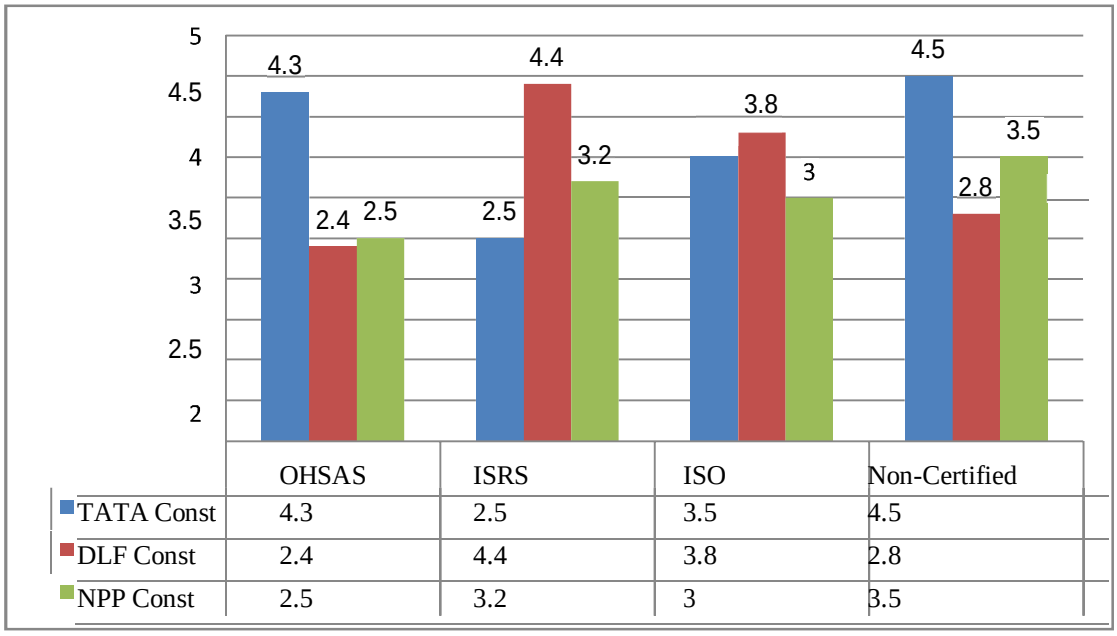
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The ANOVA test statistics of certifications effect on awareness of determinants of safety management practises presented in Table 8 revealed a significant difference (F = 4.734, Sig. =.003) between the respondents' level of awareness for the determinants of safety management practises of their organisation based on certifications. As a result of the varying standards of training and awareness modules, it is possible to deduce that the respondents' degree of awareness for the determinants of safety management practises is affected by the kind of certification of their firm.

Table 9 offered many comparisons between the groups, which aids in recognising the importance of differences between them. According to the significant column value, the mean difference between Noncertified and OHSAS (.156), Noncertified and ISO (.205), ISO and OHSAS (1.000), and all other remaining intergroup comparison mean value comparisons showed insignificance, while all other remaining intergroup comparison mean value comparisons showed significant difference.

As a result, it was determined that Ha4 must be recognised, confirming that there is a considerable link between safety certificates and the level of awareness for the determinants of safety management practises.

Fig 5.2: Certification wise mean score of level of awareness for the particular certification



According to the graphical representation of the mean score of level of awareness for the determinants of safety management practises in Fig 2, the highest mean score (4.3) for awareness of OHSAS certification was observed for TATA construction respondents, the highest mean score (4.4) for ISRS was observed for DLF construction respondents, and the highest mean score (3.8) for ISO was observed for DLF. The variations in the mean score of awareness for safety management procedures are significant, and the explanation for this is the function of HRM in raising awareness among business and work site employees.

Table 10: Status of Hypothesis established to examine the effect of certifications on level of awareness for determinants of safety management practices

Hypothesis	Type	Status
H_{a4}: There is significant relationship between safety certifications and level of awareness for the determinants ofsafety management practices.	Alternate	Accepted

VI. CONCLUSIONS

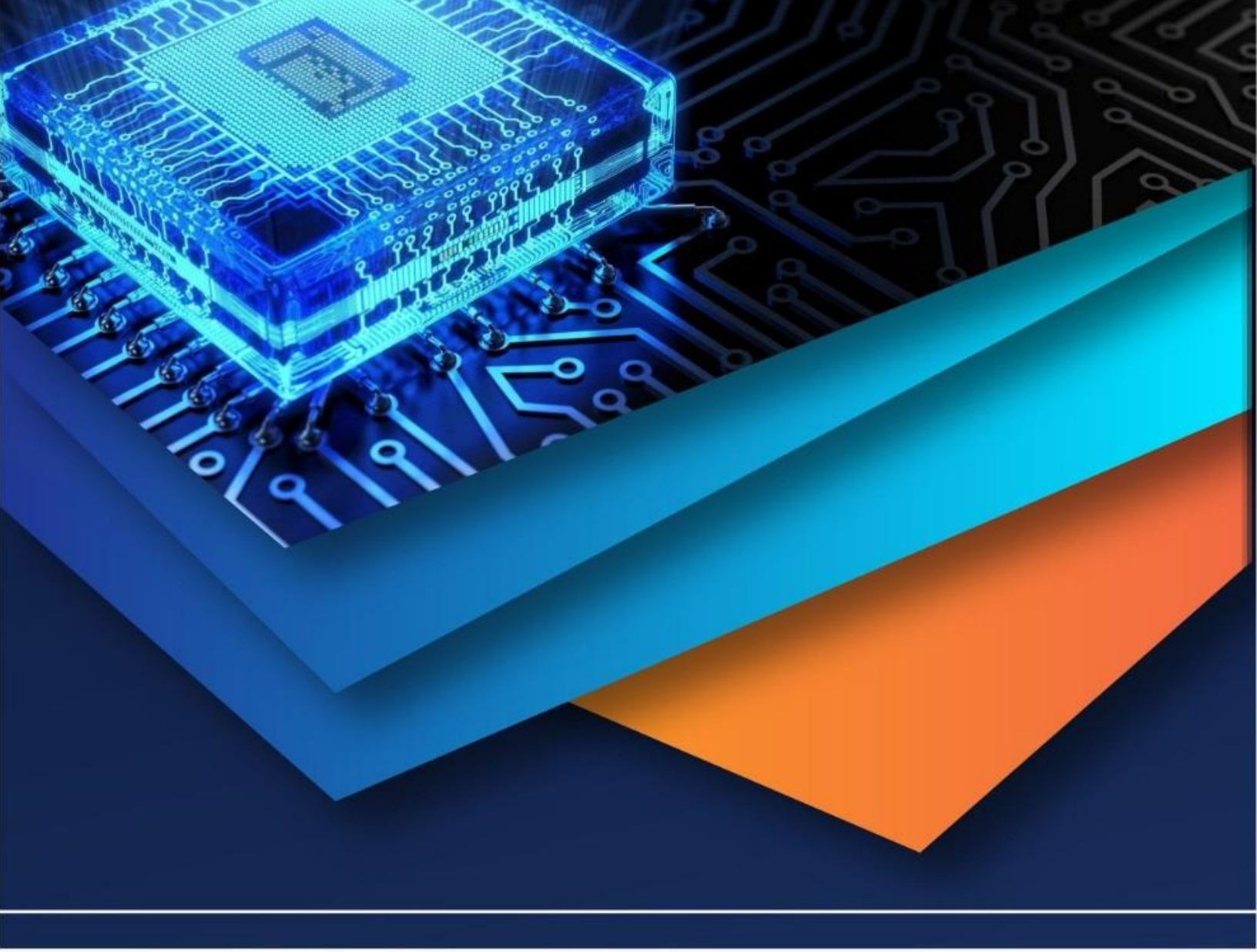
The safety issues and matters are extremely technical and multifaceted for some environments, such as for those industries (Construction Industry) where risk exposure is very high dimensions become very wide, this overall concludes in for complex responsibility for safety management delegated to occupational health and safety specialists or professional and human resource executives, who may or may not fall under the umbrella of the HR department.

Even after the enforcement of government-governed laws for the safety of workers on construction sites, HR typically has a role to play in developing and enforcing policies, practises, training, overseeing the operation of the health and safety committee, communication, and regulatory reporting in the construction industry to ensure overall workforce well-being. The findings generated from the statistical analysis of data acquired via the instrument referred to in this research study, which is intended to assess safety management practises, are as follows. 80 respondents were entirely aware of their organization's OHS policies and procedures, 63 were slightly knowledgeable, 89 were aware of a few OHS practises, 32 were not aware of OHS, and the remaining 36 were completely unaware of OHS practises and regulations. As a result, there is a greater opportunity to raise OHS awareness among construction employees, and strong standards must be established by the firms' human resource management. Using the ANOVA test to assess the effect of demographic characteristics (Gender, Academic Qualification, and Job Category) on the level of awareness of respondents for the determinants of safety management practises, it was discovered that gender (male and female) has no effect on the level of awareness for the determinants of safety management practises, but academic qualification and job category of respondent have a significant effect on the level of awareness for the determinants of safety management practises. Using the ANOVA test to determine the significance of the relationship between safety certifications and level of awareness for determinants of safety management practises, it was discovered that there is a significant difference between the respondents' level of awareness for the determinants of safety management practises of their organisation according to certifications as F values were 4.734, and Sig. value was.003. It contributes to the conclusion that the kind of certification of respondents' organisations affects their degree of awareness for the determinants of safety management practises, owing to differing standards of training and awareness modules.

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