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Comparison of safety perception between local & migrated labourers in Kerala

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ABSTRACT

The construction industry is thought together of the foremost hazardous industry. Therefore, safety on the task site is a vital aspect with regard to the safety in construction. This paper assesses the security level perception of the development building workers towards safety, health and environment on a construction job site in Kerala. The above study was administrated by choosing different construction sites in & around Kerala. Within the present study, an exhaustive survey was allotted within the construction site areas with a close developed questionnaire. The survey contained the general data with 25 wellbeing demeanour articulations on a 1-5 Likert scale which was appropriated to 800 development laborers. The questionnaire survey was given to a complete of 800 construction workers: 625 local and 175 migrated. The results of the checklist show the difference of safety levels between the local and migrated labourers. An independent sample t test, an analysis of regression, and Pearson's parametric statistic (r) analysis were performed to look at the differences in safety perception of domestic and migrated workers. The connection between the elements are frequently acquired from the poll. they're authoritative duty, factor affecting correspondence among coworkers, laborer related components, individual job and boss' job factors, impediments to wellbeing and safe conduct variables and the executives responsibility in the smallest degree levels in accordance with the administration structure and danger taking social elements. The discoveries of this examination uncovered important signs to the advancement supervisors particularly in improving the improvement laborer's mentality towards wellbeing, wellbeing and condition and henceforth great security culture inside the structure development enterprises.

Index terms: New technologies, Difficulties in safety

INTRODUCTION

In India, industry is that the second largest employer compared to agriculture. Throughout the globe, the development area of technology is one in every of the foremost hazardous industries. the amount of fatal accidents going down at the development sites is sort of alarming and therefore the major cause was found to be fall of persons from height and thru openings. In the present scenario, the Indian housing industry is kind of

large and complicated involving latest technology similarly as man power. On a par with the event of housing industry, drawbacks in terms of safety and health aspects are witnessed. within the housing industry the likelihood of a fatality is five times more likely than in an exceedingly manufacturing industry, whereas the danger of a significant injury is 2 and a half times higher. India has the world's most elevated mishap rate among development laborers, per an ongoing report by the International Labor Organization (ILO) that referred to one

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review by a territory help bunch indicating that 165 out of each 1,000 specialists are harmed on the errand. Construction workers don't seem to be the sole sufferers of accidents but also the general public including children are affected. These accidents diminish the image of the development industry, and as a result there's shortage of skilled labour. Construction projects administered in large scale are following good safety measures as a separate safety department is out there in these companies. But small scale projects preoccupied by local contractors aren't conscious of the protection requirements that might prevent construction site accidents.

AIMS AND OBJECTIVES

To examine the comparison of safety perception between the local & migrated labourers in construction site in Kerala and evaluate its through Literature Review, Questionnaire surveys and worksite visit. Evaluate the security culture of the staff with respect to occupational health and issues of safety. Assess employee involvement level within the existing safety program and Assess the worker perception regarding the prevailing safety management. This study goes to be conducted that specialize in the comparison of safety perception between the local & migrated labourers at construction site in Kerala which are through interview and questionnaire forms to the labourers at construction site. To study the importance of safety awareness among the labourers. To reduce the speed of accidents within the site because of lack of safety awareness.

SAFETY HAZARDS

The leading safety hazards on hazards have caused injuries and deaths on construction sites throughout the globe. Failures in hazard identification are often because of limited or improper training and supervision of workers. Areas where there's limited training include tasks in design for safety, safety inspection, and monitoring safety. Failure in any of those areas may end up in an increased risk in exposing workers to harm within the construction environment. Falls are the leading reason behind

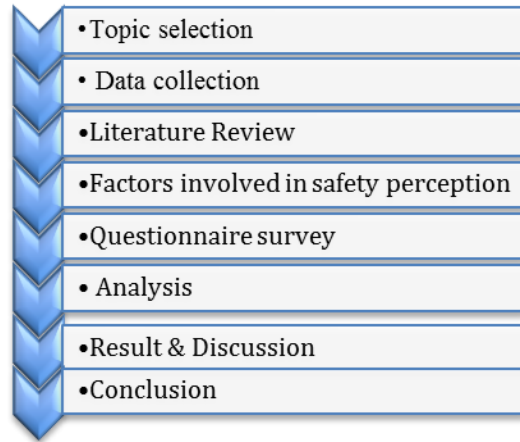
injury within the housing industry, in particularly for elder and untrained construction workers. within the Occupational Safety and Health Administration (OSHA) Handbook (29 CFR) employed by the us, fall protection is required in areas including but not limited to ramps, runways, and other walkways; excavations; hoist areas; holes; form-work; forefront work; unprotected sides and edges; overhand bricklaying and related work; roofing; precast erection; wall openings; floor openings like holes; residential construction; and other walking/working surfaces. Other countries have regulations and guidelines for fall protections to forestall injuries and deaths. Employees on construction sites also have to remember of dangers on the bottom. Cables running across roadways were often seen until cable ramp equipment was invented to guard hoses and other equipment which had to be laid out. Another common hazard that workers may face is overexposure to heat and humidity within the environment.

METHODOLOGY

Research methodology could be a systematic thanks to determine the result on the research problem. It's a science of studying how research is to be dispensed. Research methodology describes the work plan of the research. It comprises the theoretical analysis of the body of methods and principles related to a branch of information. This chapter presents various procedures and methods for the commencing of this project systematically. For the efficient success of the project, one should adopt a particular and an innovative method which include sequences of several activities from the initial of project work to its completion. This project have adopted some reliable and innovative methods which include, selection of study area, systematic collection of information within the kind of literature papers and journal analysis and interpretation of information, identification of topic, project planning which involves adopting innovative ideas for the progress of project success, conducting detailed study on needful tools. An independent sample t test, an analysis of regression and Pearson's parametric statistic analysis were performed to look at the differences

in safety perception of local and migrated laborers. Data collected from the questionnaire survey were analyzed using the statistical software package SPSS 22.0. Survey through questionnaires is found

effective because relative case of obtaining standard data is acceptable for achieving the objectives of this study.



DATA COLLECTION

The concept of safety perception are extensively studied via a review of existing literature including books and journal articles. A

structured questionnaire is floated 25 numbers of respondents working in Indian construction sector. The questionnaire header.

Table 1 Differences in safety perception

Characteristics		n		mean		SD		t/f2		pt	
		K	M	K	M	K	M	K	M	K	M
Sex	Male	520	170	3.22	3.7	0.312	0.321	0.983	0.469	0.593	0.488
	Female	155	5	3.19	3.42	0.356	0.485				
Age (y)	<18	60	3	3.24	3.46	0.395	0.621	0.887	7.486	0.683	<0.002
	18 - 30s	234	96	3.29	3.37	0.324	0.283				
	30 - 40s	298	70	3.36	3.21	0.333	0.385				
	>40s	33	6	3.12	3.45	0.324	0.597				
Education level	< middle school	403	133	3.28	3.12	0.391	0.441	0.921	5.586	0.612	0.008
	High school	215	40	3.49	3.11	0.321	0.432				
	Graduate school	7	2	3.11	3.65	0.363	0.386				
Malayalam language level	None at all	-	10	-	3.28	-	0.412	-	7.611		<0.002
	Poor	-	113	-	3.94	-	0.362	-			
	Intermediate	-	34	-	3.05	-	0.319	-			
	Good	-	15	-	3.46	-	0.510	-			
	Very good	-	3	-	3.23	-	0.468	-			
Safety trainer records	Yes	591	156	3.38	3.31	0.323	0.333	1.421	1.588	0.049	0.122
	No	34	19	3.24	3.01	0.394	0.690				
Workplace accident	Yes	159	12	3.63	3.79	0.387	0.376	1.512	7.888	0.025	0.007
	No	466	163	3.41	3.62	0.350	0.489				

Nationality	Kerala	625	-	3.86	-	0.319	-	7.385	-	<0.002
	Tamil Nadu	-	100	-	3.15	-	0.367	-		
	Bihar	-	30	-	3.33	-	0.384	-		
	West Bengal	-	25	-	3.42	-	0.396	-		
	Uttar Pradesh	-	20	-	3.56	-	0.400	-		
TOTAL	625	175	3.43	3.74	0.386	0.399				

Contains some basic information to the respondent about the study and also the questionnaire and space at the last of the questionnaire is provided to write down some comments if they need any about the study or the questionnaire. The questions were designed in such the simplest way that they were simple and might easily understand by the respondents. The questionnaire is split into two main parts are as follows:

1. Overview of the researcher and therefore the study
2. The questionnaire itself

ANALYSIS & RESULT

The questionnaire survey was given to a complete of 625 participants were from Kerala, and 175 workers were from other states, including state, Bihar, West Bengal, and state. the bulk of migrated workers surveyed were Tamilians (n=100), 30 workers from Bihar, 25 workers from state and 20 workers from state were surveyed. Within the education level section, 50 foreign workers who had a degree qualified were mainly from state and state and a pair of of them worked as safety supervisors within the workplace. The age of migrated and native workers were collected so as to judge the relation between age and workers history of accidents and injuries. Among migrant workers, the 40's people had the biggest number of workers: 60 migrants and 294 local workers. The 20's cohort was the tiniest for both worker groups. Malayalam language ability of migrated workers varied by ethnic origin. a complete of 100 of the participants were Tamilians. Therefore, it absolutely was not surprising that 22 workers had a decent level of malayalam language ability and 1 from one another state. Workplace accident rates of workers during their career at construction sites were 15 (10.4%) for migrants and 92(17.0%) for local workers, which

didn't show a big difference between the 2 worker groups.

As indicated in Table 1, the average level of safety perception for migrated workers was 3.74 points out of 5 (standard deviation 0.399). This was more than that of local workers (average 3.43, variance 0.386). This difference was because of negative and positive questions asked within the questionnaire. The variables of sex and safety training showed an insignificant impact on the protection perception of local and migrated labourers. Differences of nationality ($F = 7.385$, $p < 0.002$) and workplace accident experience were significant for both domestic ($F = 1.512$, $p < 0.008$) and migrant ($F = 7.888$, $p < 0.008$) workers. In contrast, age ($F = 7.486$, $p < 0.002$), education level ($F = 5.586$, $p < 0.008$) and Malayalam language level ($F = 7.611$, $p < 0.002$) were significant variables for migrant workers only.

In Table 2, the results of multivariate analysis to see relative impact of domestic and foreign workers characteristics on accident rates are shown below. When the results of the F test showed a p value < 0.05 , it indicated that overall, the regression model was statistically significant. Statistically, variables like age, education, training, and language influenced accident rates significantly ($F = 44.14$, $p < 0.002$ for migrants, and $F = 23.83$, $p < 0.002$ for local workers). R^2 was 0.64 (64%) for migrants, this score for domestic workers was 0.11 (11%), which was below that for migrants. Accident rates were significantly influenced by language ($t = 5.08$, $p < 0.002$) and education ($t = 6.48$, $p < 0.002$) for migrant workers. In terms of safety discipline, there was a negative influence, which meant that more accidents occurred when the education and language level decreased. For local workers, the numerous factor influencing accident rates was training ($t = 4.49$,

$p < 0.002$). Less safety training caused more accidents.

Table 2 Regression analysis of characteristic value for accidents

Characteristics		Unstandardized coefficient	Standardised coefficient		
		B*	SE	B+	tz
Migrant	Age	-0.019	0.009	-0.135	-2.016
	Education	-0.106	0.016	-0.359	-6.488
	Language	-0.096	0.019	-0.357	-5.086
	Training	0.010	0.197	0.005	0.048
	(constant)	2.329	0.161		14.509
Local	Age	-0.008	0.013	-0.023	-0.589
	Education	-0.049	0.017	-0.116	-2.928
	Training	-0.297	0.066	-0.158	-4.499
	(constant)	1.821	0.124		14.649

$R^2 = 0.64$ (migrant), $R^2 = 0.11$ (local), $p < 0.002$

SE = standard error.

B* = Unstandardized coefficients.

B+ = Standardized regression coefficient

tz = Ratio of the departure of an estimated parameter from its notional value to its SE

In Table 3, Pearson's parametric statistic analysis from the survey questionnaire is presented below, with the importance values. Questionnaire items like mistake blaming, accident prevention, and peer pressure were rewritten concisely within the table to avoid confusion for the interpretation of the statistical results. in keeping with the correlation analysis of migrant construction workers, senior management of the corporate

demonstrated full commitment to safety and health, but the correlation of 0.148 meant that there was an occasional correlation between blaming staff after they made mistakes and commitment to safety. From the protection point of view, it absolutely was interpreted that while management gave the best priority to safety and health, they didn't tend guilty the staff for the items that the staff made unsafe and unhealthy. A parametric statistic of 0.428** meant that a positive significant relation showed that local were blamed or warned once they made mistakes in terms of safety. This important finding showed that local workers had more opportunities to remember of their unsafe behavior at work than foreign workers had.

Table 3 Correlation values of survey question

FACTORS		Migrant	Local
Management interest on safety	Mistake blaming	0.148	0.428*
Prevention of accidents	Mistake blaming	0.476*	-0.123*
Accident prevention	Mistake blaming	0.304*	0.123*
Protecting management	Mistake blaming	0.445*	-0.057
Age	Risk control reasonable	-0.330*	0.054
Knowledge on instruction	Accident	-0.171+	0.047
Education level	Involving in risk assessment	-0.198+	0.027
Management interest on safety	Adequate safety training	0.457*	0.451*
Management high priority on safety	Adequate safety training	0.521*	0.400*
Staff are praised for working safely	Adequate safety training	0.418*	0.327*
Protective equipment obligatory	Adequate safety training	0.417*	0.124*
Protective equipment wearing	Useful safety briefing	0.273*	0.132*
Knocks and bruises	Knowledge on instruction	-0.304*	-0.163*
Knocks and bruises	Peer pressure	0.407*	0.308*

r, Pearson's correlation coefficient value.

*Correlation is significant at the 0.01 level (2-tailed).

+Correlation is significant at the 0.05 level (2-tailed).

DISCUSSION

This study provided a comparison of safety perception for both migrated and native workers within the housing industry in Kerala. First, possible influencing factors associated with the final background of workers factors like age, education, language ability, nationality, safety training, and workplace accident history were analyzed for impact on safety perception. Then a regression and Pearson's correlation analyses were conducted. An improvement plan has been suggested for migrated and native workers who add the Kerala housing industry. The aim was to introduce a concept for construction companies and organizations where migrants are employed. In keeping with the correlation analysis, a positive relation between "blaming staff once they make safety-related mistakes" and "management commitments to safety" was found to be significant just for local workers. Migrant workers might need been considered temporary workers, in order that they weren't blamed or warned the maximum amount as local were. Management and safety representatives should remember of safety rules and implement them fairly. Migrant workers who didn't fully understand safety instructions cared-for experience workplace accidents. Here, the language ability of foreign workers played a crucial role. to achieve a desired safety level at the workplace, appropriate safety training should be provided for workers who have poor Malayalam language skills. Additionally, safety training should be provided separately in light of workers education levels and ages. Migrant workers had a lower education level than their local counterparts, so there was an opportunity that they'd difficulties comprehending the training provided. To achieve success with less-educated workers and young workers, safety training should be designed and developed in accordance with the necessities. Lastly, it's seen from the analysis that migrant workers within the Kerala industry failed to believe that safety rules were meant to safeguard

workers. However, local workers didn't share the identical opinion. Therefore, safety regulations, safety policy, and rules should be clearly identified to migrant workers, and safety policies should be redesigned if necessary. Safety training sessions for the migrant workers should be provided in several languages and it should be placed within the Kerala Occupational Safety and Health Act. These trainings shouldn't include only work-related safety information, but also information on employees rights and employers responsibilities.

SUGGESTION AND RECOMMENDATIONS

Increasing the number of foreign workers in Kerala has resulted in problems related to workplace safety. The purpose of this study was to examine the safety perception of local and migrated workers in the construction industry. A questionnaire survey was given to 625 local and 175 migrated workers at several construction sites in Kerala. To compare workers safety perception, the survey asked about general background information and safety-related attitudes. A plan for improving safety perception has been described; according to the findings of the analysis, such a plan is especially important for migrant workers. An independent sample 't' test, regression analysis, and Pearson's correlation coefficient analysis demonstrated that language, education, nationality, and age had a significant influence on safety perception of foreign workers. In addition, managerial safety directives were less effective for foreign workers compared to local workers. Thus, carrying out safety training and instructions might not be enough for workers to be aware of safety at construction sites. Warning or blaming workers when they make mistakes related to safety may help to improve their safety perception. Due to differences of education level as well as language ability, migrant workers need extra attention in order to improve safety perception. The safety act and safety rules for the site should be presented in several languages by a responsible person who is in charge of safety. The aim of the improvement plan is to have a better safety status by making suggestions for the Kerala construction industry

for both local and migrated workers. However, this may be applied in other countries. Nevertheless, this subject should be studied more for other countries in order to reach a more generalized result.

CONCLUSION

Increasing the amount of migrated workers in Kerala has resulted in problems associated with workplace safety. The aim of this study was to look at the security perception of local and migrated workers within the construction industry. A questionnaire survey was prepared to match the security perception of local and migrated labourers within the construction sites in Kerala. to check workers safety perception, the survey asked about general background information and safety related attitudes. an idea for improving safety perception has been described. The interviewees during this study suggest that there are procedures, practices and policies which will be implemented and followed within the construction site regarding safety. to realize this goal, there should be a mixture of competent personnel on construction site to hold out the project. The aim of this study is to check the security perception between local and migrated labourers within the construction site in Kerala. This project proceeds on with an introduction to construction safety perception,

specially explaining the objectives, needs and significance of the study. the data regarding the factors influencing safety in keeping with construction professionals and people obtained through literature study were coupled together. Important factors were noted and also the questionnaire form was prepared. A questionnaire survey is conducted in various construction companies and soon the foremost factors answerable for safety perception are to be identified using the statistical package for social sciences tool. The recommendations for the protection perception is provided and brought into consideration. Construction safety training is widely thought to be a vital element in improving safety performance and training practices are recognized as a crucial means to boost worker's knowledge and behavior and to push safety performance. Most migrant workers' training efforts lessen effective thanks to information delivery gaps resulting from language barriers, literacy issues and therefore the use of insufficiently engaging approaches during training sessions. As a result, the knowledge acquired during training isn't fully applied on the jobsite. Hence a spot always exists between knowledge and sustainable workplace performance in migrant workforces and this is often the rationale that efforts don't alter the performance and behavior towards safety.

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