International Journal of Civil Engineering, Construction and Estate Management
Vol.3, No.4, pp.31-40, October 2015
Published by European Centre for Research Training and Development UK (www.eajournals.org

IMPACT OF ILLITERATE RURAL MIGRANT WORKERS ON THE EFFECTIVENESS OF CONSTRUCTION SAFETY INDUCTION IN LAGOS STATE NIGERIA

Okorie, V.N (PhD) [1] Okolie, K.C (PhD) [2] and Ukah, G.C[3]

[1]Department of Quantity Surveying, University of Benin, Benin City Edo State
[2]Department of Building, Nnamdi Azikiwe University Awka Anambra State
[3]Department of Building Federal Polytechnic Nekede, Owerri Imo State

ABSTRACT: *Demand for housing, factory buildings and other social infrastructural development in the major urban cites around the world are ever on the increase. To meet the high demand of labour force required, contractors often employ illiterate rural migrant workers that drift from rural areas to cities for greener pasture. These categories of construction site workers have poor understanding of English and therefore contribute to a disproportionate number of site fatalities and injuries on sites. This study aimed at investigating the extent to which these illiterate rural migrant construction site workers impact on the effectiveness of construction safety induction training on sites. The study examines the demographic data of the illiterate rural migrant construction site workers, construction H&S legislation and language used in conducting site safety induction training to the workers. Questionnaire survey was then structured from literature and administered to workers with the aid of interpreters. This was followed by interviews conducted with site supervisors. Data was electronically manipulated using MS Excel. From the analysis, the study revealed that about 64.5% of the general workers are rural migrant workers with no basic education and trade qualifications. The study further revealed that poor understanding of spoken English among the rural migrant workers contribute to site injuries and fatalities. Nevertheless, there is lack of commitment on the part of contracting organizations, particularly among the medium and small sized companies in conducting safety induction training to workers. The study concludes that H&S is an important issue in the Occupational Safety and Health Act (OSHA) all over the World. The Act emphasizes the importance of employee education pertaining to H&S of the work environment regardless of whether the employee is educated or illiterate. The study therefore recommends that contractors conduct site H&S induction training to workers whether they are temporary or permanent; and that safety induction training should be conducted in local language of the rural migrant workers.*

KEYWORDS: Construction, Illiterate, Rural, Migrant Workers, Health and Safety Induction, Lagos

INTRODUCTION

Rural migrant workers have always been a source of regular and cheap labour to the construction industry in urban cities (Nissen, 2007). The use of illiterate and unskilled rural migrant workers for construction work in the urban cites is a global phenomenon. These categories of rural migrants drift to the cities for search of greener pasture. The Health and Safety Executive (HSE) (2008) maintains that traditionally, construction work is often the most alternative to farm work, particularly to those without any skill or education. Research findings emanating from the developing countries have shown that 47-65% of the

ISSN 2055-6578(Print), ISSN 2055-6586(online)

construction site general workers are illiterate rural migrants that were motivated to drift to the cities to earn as much as possible in short time when they have finished harvesting the crops on farm (HSE, 2008). The situation has been exacerbated by cheaper transportation system and the instant world-wide communication through the use of global system for mobile communication (GSM) mobile phone (International Labour organization (ILO, 2005). The illiterate rural migrant workers are able to find out work through the mobile phone contact with relatives and travel to cities at relatively low cost. However, a combination of events contributed to the drift of these categories of rural migrant workers to the cities such as economic, social, political or religious (ILO, 2005). Beside this, illiterate rural migrant workers have proved to be a source of cheaper labour to the construction industry (Nissen (2007).

According to the ILO (2005), illiterate rural migrant workers have been very helpful to the construction industry. They are cheaper and regular in supply (Nissen (2007). Vazquez and Stalnaker (2004) state, the growing number of illiterate rural migrant workers in the construction industry carries a burden as well, namely a rise in work-related injuries and fatalities compared with the rate of fatalities and injuries among the permanent site workers. In Nigeria, the National Occupational Safety and Information Centre (NOSHIC) (2006) reports that accidents in the industry are among the highest in all industrial sectors, resulting in a second of all work fatalities. The high number of fatalities and injuries cases in the Nigeria construction sites should be a serious concern to all ((NOSHIC, 2006). Construction accidents and incidents cost national economies over 5% of their gross domestic product (GDP) (ILO, 2011).

The working environment in which these illiterate rural migrants workers are exposed to, contribute to workplace injuries and fatalities (Bust, Gibb and Pink, 2008). Rural migrant workers as noted by (Nissen (2007), are sources of cheap labour and always employed do the most dirty, difficulty and dangerous work. However, the economic and social infrastructure facilities available in urban cities remain a focal point of attraction to these rural migrant workers with their associated site H&S problems. Therefore, this study seeks to determine the impact of illiterate rural migrant workers on the effectiveness of construction site H&S induction training.

Aim and Objectives of the Study

The aim of this study was to investigate the extent to which the illiterate rural migrant construction site workers impact on the effectiveness of construction safety induction training and recommend measures that would help to minimize construction site injuries and fatalities in the study area. In this regard, the specific objectives of the study include;

- To examine the demographic data of the illiterate rural migrant construction site workers and their challenges in the study area **;**
- To provide a better understanding of construction H&S legislation and site safety induction training in construction work environment; and
- Evaluate the H&S induction training to construction site workers and its impact on the effectiveness of construction safety induction.

ISSN 2055-6578(Print), ISSN 2055-6586(online)

REVIEW OF RELATED LITERATURE

Illiterate rural migrant site workers

Poor understanding of spoken English among construction site workers is one of the major barriers to successful conduct of site H&S induction training (Nissen, 2007). Similarly, (Bust et al, 2008) argue that effective H&S site management is dependent on efficient communication of instruction and information between workers and co-workers and between workers and supervisors. English as a second language to many construction site workers has a serious impact on workers' H&S behviour. Moreover this problem is aggravated by the fact that about 47-65% these site workers are illiterate and can only speak their own language or mother tongue (ILO, 2005).

Nigeria population is currently estimated to be about 170 million. There are over 500 tribes, with Igbo, Hausa and Yoruba being the three major tribes amongst others. The largest tribe out of the three major ethnic groups in Nigeria is the Hausa. The Hausa has Islam as one of their major religion. Islamic religion has a significant influence on this people's culture; as a result they did not embrace Western education early compared to the other two major tribes Igbo and Yoruba. Though, Igbo and Yoruba tribes might have embraced Western education earlier, there are some smaller/minor tribes within them that did not. Other possible factors could be the civil war that took place in Nigeria from 1967-1970. The Nigerian civil war with its associated socio- economic problems also has serious negative impact on the education growth of the Igbo tribe and her minor tribes. The low levels of education found in some of the major and minor/small tribes in Nigeria leads these people into primary industry such as agriculture, mining and construction. Vazquez and Stalnker (2004) maintain that low education has a negative impact on H&S performance. They further state that the inability to communicate well, as a result of a high illiteracy rate among the Latino construction site workers resulted in poor H&S performance. Similarly, Torrance (2004), surveyed urban immigrant workers in an immigrant community in Northern Virginia, and found that they face a high risk of occupational injuries, with adverse H&S outcomes.

Cordova (2003) states that understanding of spoken English among site workers have been resulted in fewer workplace injuries and fatalities. She further maintains that it also increases site compliance and reduces employers' compensation insurance premiums. On site, where all workers can speak English and understand each other, H&S culture is easily developed and nurtured. Also, conducting site H&S training such as weekly toolbox talks and safety induction training to workers will be optimized leading to workers safe behaviour and safe practices on sites.

Effect of illiterate rural migrant workers on H&S performance

Vazquez and Stalnaker (2004) assert that poor understanding of spoken English among rural migrant workers on construction site compromise H&S management. Further, research conducted by Haslam, Hide, Gibb, Gyi, Pavitt and Atkinson (2005) on contributing factors to construction accidents reveal that poor communication skills and understanding of spoken English within the work team contributed to site accidents. The study quoted a 30 year old ceiling fixer who said if his workmate understand the word 'stop pushing' probably an accident could have been prevented. From the above incident it can be inferred that the high illiteracy rate among construction site workers has a serious negative impact on H&S management. Another possible visible effect of illiteracy among rural migrant workers on site

ISSN 2055-6578(Print), ISSN 2055-6586(online)

H&S management is their non-compliance to site H&S rules and procedures (Vazquez and Stalnaker, 2004).

Evidence from site supervision has shown that foremen and supervisors often loss their temper and become frustrated trying to explain to illiterate site workers who have no trade qualification and in particular cannot understand spoken English, on what to and how to do it safely. This ugly scenario always end up with, supervisor being frustrated and tell them to skip that part, which compromise site H&S management.

Vazquez and Stalnaker (2004) cited Crockett (2002) states that another factor contributing to higher fatality and injury rate among rural migrant construction site workers is the fact that the rural migrant workers always show some loyalty and respect to their employers, resulting in site accidents and incidents not being reported for the fear of being fired from work. This attitude is common among illiterate rural migrant workers. The attitude not only prevents reporting of workplace incidents or injuries, unsafe acts or conditions, but also it does not encourage effective site H&S induction training.

Construction H&S legislation

A worker H&S is an important issue in the Occupational Safety and Health Act (OSHA) all over the World. The Act is primarily to ensure that employer creates a safe work environment free from all forms of hazards to workers. The Act further emphasizes the importance of employee education pertaining to H&S of the working environment regardless of whether the employee is educated or illiterate. Failure to comply with the Act could result in legal prosecution of an employer by the state authority (Hinze, 2006).

Section 21 of the Act deals on 'safety training and education of workers' sub-section 5 of Section 21 describes how safety induction should be conducted at reasonable interval to ensure adequate understanding of H&S relative to the work place and materials used on site. OSHA Act, according Hughes and Ferrett (2009) defines the duties and responsibilities of employer with regard to provision of adequate personal protective equipment (PPE), instructions and training as required and necessary to ensure that H&S of workers are maintained.

Induction training of site workers

Causes of construction site injuries and fatalities can be attributed to many factors. One of the factors is a lack of induction training of workers among contractors particularly in the developing countries (Hinze, 2006). Induction H&S training plays a key role in the development of awareness and understanding of the specific hazards and risks associated with construction site operations and its environment (Hughes and Ferrett, 2009). It has been noted that a lack of site H&S induction training particularly to new and illiterate workers is a major factor contributing to site injuries. Hinze (2006) succinctly states that new and rural migrant workers are accident waiting to happen. Thus, these categories of workers should be given site H&S induction training at a reasonable interval. It is their right and contractors whether small, medium or large owns it as a duty that must be done as required by law.

H&S induction training is very important as it familiarizes new workers with contractor's H&S policy, hazards and work environment. Despite the importance of site H&S induction training, contractors do not have a good record of investing in this aspect of workers' training when compared with organizations in other industries (Hughes and Ferrett, 2009). Luria

ISSN 2055-6578(Print), ISSN 2055-6586(online)

(2011) maintains that site H&S induction training is a prerequisite for an appropriate level of awareness relative to H&S, which, in turn, is a prerequisite for the development of an optimum H&S culture. Vazquez and Stalnker (2004) state that induction training is very important in the construction site where the levels of illiteracy among workers are deemed to be very high.

Language of H&S induction training

Conducting site H&S induction training to workers whom English is not their home language is a serious problem confronting H&S management. Torrance (2004) assert that illiterate site workers with a poor understanding of spoken English are at a higher risk of injuries and fatalities when compared with those who can understand English. This poses a serious problem to contractors in managing site H&S. The HSE (2008) maintains that an effective site H&S induction training programme should incorporate modern technologies such as audio (visual) and translators. The benefits of these modern technologies are numerous such as better understanding among the illiterate rural migrant workers, reduction of site injuries and increase workers moral.

The use of visual images and digital technologies in conducting site H&S induction training is becoming increasingly important. Bust et al (2008) state that site H&S induction training involving people with different languages is better conducted with audio (visual) technology. Vazquez and Stalnker (2004) argue that the use of H&S training manuals written only in the English language may not achieved the desired results. More importantly, English is not the home language of Nigerian construction site workers. The problem is exacerbated by the fact that majority of the general site workers are illiterate rural migrants. HSE (2008) maintains that contractors have a duty to provide translation equipment, interpreters or replacing written manuals with clearly understood symbols or pictures, where workers have problems of understanding English or cannot read English. The use of audio and digital technologies as a medium of site H&S induction training has improved learning and understanding among the illiterate rural migrant construction site workers.

RESEARCH METHODOLOGY

Seven construction companies were randomly selected within Lagos metropolis, for the purpose of this study. Five companies accepted to participate for the study, one large, two medium and two small. Questionnaires were administered to construction workers from each of the five companies. Since most of the general workers are illiterate, interpreters were employed when necessary. The aim of the questionnaire was to determine the effectiveness of site H&S induction training on illiterate rural migrant construction site workers.

One hundred and fifty (150) questionnaires were distributed, seventy-five (75) were returned, and this resulted in a response rate of 50%. The response rate achieved for this research is similar to that achieved in other surveys (Sutrisna, 2009; Collins, 2008). It could be inferred from Sutrisna (2009) and Dainty (2008) that performing a statistical analysis in survey within the response rate equal to or above the threshold of thirty (30) is acceptable. Thus 50% response rate achieved in this survey provides reasonable data for analysis. Interviews were also conducted with five supervisors from each of the company. An interview is an interaction between two or more people to gain insight relative to problems (Leedy and

ISSN 2055-6578(Print), ISSN 2055-6586(online)

Ormrod, 2010). The aim of the interviews was, to gain an understanding on the effectiveness of site H&S induction training programme they employed in their site.

Data obtained from the completed questionnaire survey and interviews were analysed with the aid of Micro- soft Excel package and findings presented in tables 1-.4

FINDINGS

Demography of respondents

Table 1 Five states selected and responses obtained from five geopolitical zone of Nigeria

Zones	States	No	%
North Central	**Kogi State**	**21**	**27.5**
South West	**Ekiti State**	**11**	**13.5**
South East	**Enugu State**	**8**	**9.5**
North East	**Boruo State**	**18**	**23.5**
North West	**Adamawa State**	**17**	**18.5**
Total		**75**	**100**

Five States were randomly selected from the five geopolitical zones of Nigeria for this study. Table 1 indicates that 27.5% of the illiterate rural migrant workers from Kogi State, 13.5% from Ekiti state, 11.4% from Enugu State, 23.5% from Borno State, 18.5% from Adamawa State. The average age of the respondents is 31.8 years; they have lived in Lagos State for an average of 2.3 years, and have worked for their present employer for an average of 1.5 years. Although, 27.5% of the respondents are from the North Central of the geopolitical zone, it is not an indication that the state is educationally backward.

Table 2 Educational qualifications

Level	Number	%
Basic 0	49	64.5
Basic 6	17	25.5
Basic 7	5	6.5
Junior SS	4	3.5
Total	75	100

Table 2 indicates that in general the rural migrant construction site workers have low level of education as 64.5% have no basic education at all, 25.5% basic 6, 6.5% basic 7, and .3.5% junior secondary certificate. The interview revealed that those with junior secondary certificates from Enugu and Ekiti state respectively. This finding supported the literature that about 47-65% of site workers are illiterate and can only speak their own language or mother tongue (ILO, 2005).

ISSN 2055-6578(Print), ISSN 2055-6586(online)

Table 3 Skills and experience

Trade qualification	No.	%
Carpenter	3	8.1
Iron bender	1	2.7
Plumber	1	2.7
Brick/block layer	12	32.4
Painter	3	8.1
Electrician	2	5.3
Others	15	40.5
Total	37	100

Table 3 indicates that, 8.1% qualified in carpentry, 2.7% qualified in iron bender, 2.7% qualified as plumber, 32.4 % qualified in brick/block layer, 8.1% in painting, , and 5.3% qualified in electrician. The 40.5% who have no construction trade qualifications consist of cleaners, assistants, messengers/tea boy.

The lack of construction trade qualification among the rural migrant construction site workers could be a factor contributing to poor site H&S.

Table 4 Statement on respondents' perception of H&S induction training

Statement	Sometimes	Always	Not all	No idea
Are you aware of site H&S induction training?	19	25	56	75
Is H&S induction training conducted weekly?	21	28	54	72
Is H&S induction training conducted for newly employed workers?	39	52	36	48
Is H&S induction training conducted only in English language?	67	89	8	19
Does your company employ an audio (visual) technology during H&S induction training?	1	5	75	95
Does your company make use of language interpreter(s) during H&S training?	9	12	66	88
Do you understand the training?	35	47	40	63

Table 4 indicates that 75% of the respondents stated that they have no idea of site H&S induction training, while 19% indicate sometimes. 56% indicated that H&S induction training is not all conducted on weekly while 28% indicated always. 39% indicated sometimes that H&S induction training is conducted for newly employed workers while 36% indicated not all. 89% indicated that H&S induction training is always conducted in English.

ISSN 2055-6578(Print), ISSN 2055-6586(online)

In the area of modern technology, 95% indicated no idea regarding the use of modern technologies such as audio (visual) aid during site H&S induction training. 88% indicated that language interpreter(s) is not used during site induction training, while 12% stated that interpreter(s) is used. 63% indicated that they not understand, while 35% agreed that they understand. The findings supported the literature in that lack of usage of audio aids in conducting site H&S induction training, particularly with illiterate site workers have negative impact on workers understanding. Bust et al (2008) assert that site H&S induction training involving wide multilingual audience is better conducted with audio technology.

Responses from site supervisors

A question was asked: "*Do you employ audio (visual) technology in conducting site H&S training, knowing that majority of your workers are illiterate?"* The five supervisors expressed dismay that they never did. However, two supervisors, one from the medium and one from large company stated that they only make use of language interpreters when necessary. The use of language interpreter(s) is a welcome development. Most importantly, English is not the home language of Nigerian construction site workers. The HSE (2008) maintains that an effective site H&S induction training programme should incorporate modern technologies such as audio (visual) and translators. According to the five supervisors interviewed, one of the greatest challenges is that while OSH Act stipulates that all site workers should be trained on H&S, the Act offers limited clarity on how to deal with the case of illiterate rural migrant workers.

However, the five supervisors interviewed indicated that on average, 67.5%% of construction workers on their sites are illiterate rural migrants. They also agreed that there are problems of communication and understanding of spoken English. Literature supports this, according to Nissen (2007); poor understanding of spoken English among construction site workers is one of the major barriers to successful conduct of site H&S induction training proramme. In addition, Vazquez and Stalnaker (2004) assert that inability to communicate well and high illiteracy rates among rural migrant site workers in the construction industry compromise H&S management.

Site H&S induction training

A question was asked with regard to site H&S training: *How regular do you conduct site H&S training to your workers?* Four of the five site supervisors interviewed stated that H&S induction training is rarely carried out on their sites. The only one that stated that H&S induction training is conducted to workers before commencing any new activity on site is from a large construction company. It has been noted that H&S training of workers, particularly among the medium and small sized construction companies in the developing countries is poor (Hughes and Ferrett, 2009).

CONCLUSIONS AND RECOMMENDATIONS

Based on the research results, it can be concluded that illiterate rural migrant construction site workers impact negatively on the effectiveness of safety induction training on site. Poor understanding of spoken English among the illiterate rural migrant construction site workers is a major impediment to effective conduct of safety induction training on site. It was also determined that medium and small contracting organizations invest little or no resources for

ISSN 2055-6578(Print), ISSN 2055-6586(online)

workers' H&S induction training as compared to large companies, particularly in the areas of employing language interpreter or the use of modern technologies such as audio (visual) aids.

The study revealed that there is a lack of management commitment to workers' H&S, contracting organizations maximizing profit by employing illiterate rural migrant workers whom they pay less and irregular conduct of site safety induction training. The following recommendations arise from the study:

- Contracting organizations have to adhere to H&S legislation as well as educating and training their workers in H&S, regardless of whether they are temporary or permanent workers;
- Construction site H&S induction training should be conducted in the local language and the use of modern technologies such as audio and translators' equipment should be encouraged, particularly among medium and small sized companies, and
- Management of contracting organizations should demonstrate commitment to workers' H&S in terms of illiterate rural migrant workers, that it is not acceptable to be injured on the job, and that completing a job is not as important as completing it safely in a healthy and safe manner.

REFERENCES

Bust, D.P., Gibb, F.G. A. & Pink, S. (2008) Managing construction health and safety: workers and communicating safety messages: *Safety Science*, 46(3), 585-597.

Collins, H. (2010) *Creative research: the theory and practice of research for the creative industries.* Lausanne: AVA Publishing SA.

Cordova, M. (2003) Effectiveness of training employees on OSHSA's new recording requirements to avoid liability: Employment law update. *Engineering construction and architectural Management*. 3, 232-245.

Danity, A.R.J. (2008) Methodological pluralism in construction management research, In: Knight, A. and Ruddock, L. (Eds). Advanced research methods in the built environment, oxford: willey-Blackwell.

Hughes, P. & Ferrett, E. D. 2009, *Introduction to Health and Safety in Construction*, Butterworth-Heinemann, Elsevier Linacre House, Jordan Hill Oxford 0X2 8DP, UK.

Health and Safety Executive (HSE) (2005) Workplace Exposure Limit, London: HSE.

Health and safety Executive (HSE) (2008) HSE Construction Intelligence Report: Analysis of Construction Injury and ill Health Intelligence. London: HSE.

Haslam, R.A., Hide, S.A., Gibb, A.G.F., Gyi, D.E., & Atkinson, S. (2005) Factors contributing construction accidents: *Applied ergonomics*, 36(4), 401-415.

Hinze, J. W. 2006, *Construction safety*, New Jersey: Prentice-Hall.

International Labour Organisation (2005) *Safety and health in construction*, Geneva: ILO.

Leedy, D. & Ormrod, J. (2010) Practical *research planning and design*: 10th ed. Pearson Education, Inc New Jersey.

National Occupational Safety and Information Centre (NOSHIC) (Republic of Nigeria, 2006), *Report of occupational safety and health,* Abuja: NOSHIC.

Nissen, B. (2007) *Immigrant construction workers and safety and health in South Florida*, Center for Labour and studies: Florida International University, Florida.

ISSN 2055-6578(Print), ISSN 2055-6586(online)

Sutrisna, M. (2009) Research methodology in doctoral research: Understanding the meaning of conducting qualitative research, Working Paper presented in ARCOM Doctoral Workshop, Liverpool, John Moores university, 12 May.

Torrance, J.W.B. (2004) Globalization and the trends in the international construction industry: A Malaysia perspective: In *proceedings of the international conference on globalization and construction; Meeting the challenges and reaping the benefits*: Bangkok, 17-29.

Vazquez, R.F. & Stalnaker, C.K. (2004) Latino workers in the construction industry: overcoming the language barrier improves safety. *Professional Safety*, 24, 121-134.

ISSN 2055-6578(Print), ISSN 2055-6586(online)