

Comparison of Construction Safety Performance of Local Chinese and Ethnic Minority Workers

Cheung M. L., Karen
Student, Department of Building & Construction, City University of Hong Kong

Tam C. M.
Professor, Department of Building & Construction, City University of Hong Kong

Abstract Owing to the shortage of labour, construction workers of different nationality have been working in Hong Kong. In recent years, certain percentages of South Asian ethnic minorities have been employed. These people having different culture, belief, language of communication and physique may perform differently in construction safety, a grave concern in the local construction industry. Using a case study approach, this paper studies the safety performance of these workers in comparison with the local Chinese. Questionnaires were sent to workers of different nationalities on a random basis, followed by an interview, to collect their personal attitude and mindset towards construction safety.



Professor, C. M. Tam

The results show that there is a difference in accident rates between Chinese workers and South Asian ethnic minorities. The reasons for the difference are communication breakdown, inadequate training, ignorant about safety regulations, higher risk of work, relatively lower in construction experience and worry about job security. Recommendations to improve the situation include provision of induction programme and training, use of workers' native language in communication, and adoption of a mentoring scheme for the ethnic minorities.

INTRODUCTION

With the concerted effort from the industry in Hong Kong, there has been a significant improvement in construction safety in the recent decades. Figure 1 show the decreasing trend of accidents for the industry.

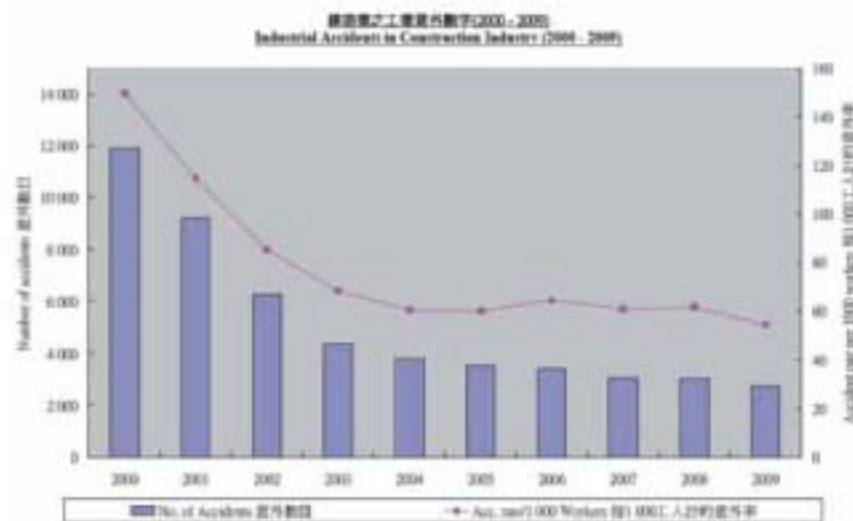


Figure 1: Industrial Accidents in Construction Industry (2000 - 2009)
(Labour Department in 2010)

Although there has been a significant improvement in construction safety in recent years, the accident rates are still intolerable when compared to other industries and the counterparts of other developed countries. The recent accident rates have troughed for quite some time, without any further improvement. From a macro point of view, to achieve any breakthrough, a quantum leap is required in safety measures. However, from a micro point of view, any small incremental improvement can help make a ripple at the current stagnant situation.

In the recent years, owing to the shortage of workforce in construction, the industry has recruited certain percentage of ethnic minorities as construction workers. These people with different culture, habits, education levels and language of communication would behave differently, leading to variation in safety performance. In order to study the possibility of any incremental improvement in construction safety, this paper is targeted to:

- ✦ Survey the difference in safety attitudes, characteristics of Chinese workers and South Asian ethnic minorities;
- ✦ Compare the construction safety performance between them; and
- ✦ Suggest some recommendations for improving the safety performance.

In this study, a case study approach is adopted and data from a small specialist contracting firm is used for the analysis.



LITERATURE REVIEW

The construction industry has been booming for years with the economic expansion and growth in population in Hong Kong. In the old days, most large contractors came from overseas. They brought in new ideas, technology, construction methods and management to the construction industry. However, the construction safety management was not their major concern at all (Lee, 1996).

In the past, construction safety was solely managed and overseen statutorily by the Factory Inspectorate Division and the Occupation Health Division of the Labour Department during the construction period. It was difficult to promote construction safety in Hong Kong because the existence of multiple trades involved in construction and the changing nature of works all the time. Most hazardous activities may last for a short period of time. Therefore, many workers may not know what other workers are doing and their general obligation on site. This creates difficulties for effective management control and safety promotion. Also, subcontracting workers may be on site for a short time, and thus training programmes provided by the main contractor are difficult to arrange. In the recent years, some laborers are new migrants, without much experience and skill in the construction industry and with little safety training, leading to possible safety problems.

Although companies should provide a safe environment to their employees, it is not safe at all in construction. It is because the responsibilities for safety belong to everyone to achieve zero accident; such as the managing director or chief executive has the responsibilities for establishing the safety policy, senior management has the responsibility for providing necessary safety infrastructure and all workers have responsibility to follow the safety policy and ensure their own works following the procedures that they do not endanger themselves or others (Rowlinson, 1997 and Kennedy, 1997).

The responsibility cannot only lie on one part, and it should be cooperated with others to promote and improve safety in construction sites. The government is responsible for the overall policy, legislation, record keeping, enforcement and compensation on construction safety. Clients should be responsible for the social and economic liability. Contractors should be responsible for the safety of all those working on site. The individual workers should behave well in all action on their own safety and others on that site. Also, there are some training organizations, such as Construction Industry Training Authority, Occupational Safety and Health Council, Hong Kong Construction Association and Hong Kong Institution of Engineers to provide quality training courses for workers. All play a role in construction safety.

In the recent years, owing to the shortage of local construction workers, most employers have started to look for people from the South Asian (SA) ethnic minorities. Most of these SAs have experienced some form of difficulties in finding a job in Hong Kong due to the following reasons:

1. Most do not know Cantonese, Mandarin and English and thus it is hard for them to search a job because most job advertisements are in Chinese or English.
2. Their qualifications obtained at their home country are not recognized in Hong Kong, or they may only have low education levels. Also, some of them are lack of special skills.
3. Most come to Hong Kong alone and the networking is not strong.
4. The cultural or religious difference between Chinese and South Asian ethnic minorities makes them difficult to get understanding from employers and co-workers.

Although there are some employment assistances to help people to find a job in Hong Kong, most of these SAs do not seek for help. It is because some of them do not know the availability of such service in Hong Kong. Even though some might know such services, they think it is useless as the services are described in Chinese and local people may have discriminatory attitude toward them.

There are some retraining services provided in Hong Kong to upgrade people's education level and skills. However, most SAs do not join these training services as they may not know the courses, not being able to find suitable courses, courses conducted in Chinese, course fees too expensive, or their education qualification not meeting the entry requirements.

CASE STUDY

In this study, a questionnaire survey to both local Chinese and South Asian ethnic minority workers has been administered in order to investigate the different construction safety performance between them. There are 60 respondents, all working in construction sites of a specialist contractor. Thirty of them are Chinese and thirty are South Asian ethnic minorities, chosen on a random basis. In the interview, some did the questionnaire themselves while some with the help of a translator of the specialist contractor.

In the questionnaire, questions were classified into 4 parts, including personal information, safety awareness, safety problem, and others.

ANALYSIS

Accident Statistics

The accident rates of the studied contractor are slightly higher than the industrial average as shown in Table 1. It is worthy to note that the accident rates of South Asian ethnic minority workers are much higher than those of Chinese workers.

Year	2005	2006	2007	2008	2009
No. of labour	Total: 833 Chinese: 589 SA: 244	Total: 369 Chinese: 297 SA: 72	Total: 323 Chinese: 246 SA: 77	Total: 245 Chinese: 190 SA: 55	Total: 296 Chinese: 224 SA: 72
No. of accidents	Total: 152 Chinese: 49 SA: 103	Total: 54 Chinese: 21 SA: 33	Total: 33 Chinese: 14 SA: 19	Total: 21 Chinese: 12 SA: 9	Total: 18 Chinese: 10 SA: 8
Accident rate per 1000 workers	182.5	146.3	102.2	85.7	60.8
Accident rate of Chinese workers per 1000 workers	83.2	70.7	56.9	63.2	44.6
Accident rate of SA workers per 1000 workers	422.1	458.3	246.8	163.6	111.1

Remarks: SA = South Asian ethnic minority

Table 1: Accident Rates of Chinese and Ethnic Minority Workers of the Studied Contractor

Effectiveness of morning briefings to arouse the alertness of safety in daily work

The percentage of South Asian ethnic minorities that support morning briefings that are useful to improve alertness of safety in daily work is only 43% while 57% think that they are useless (see Figure 2). Comparing with findings of local Chinese, 97% of Chinese workers opined that morning briefings were effective to increase safety alertness in their daily work (see Figure 3). That explains that the ethnic minorities may have communication problems in understanding the safety messages given at the briefings.

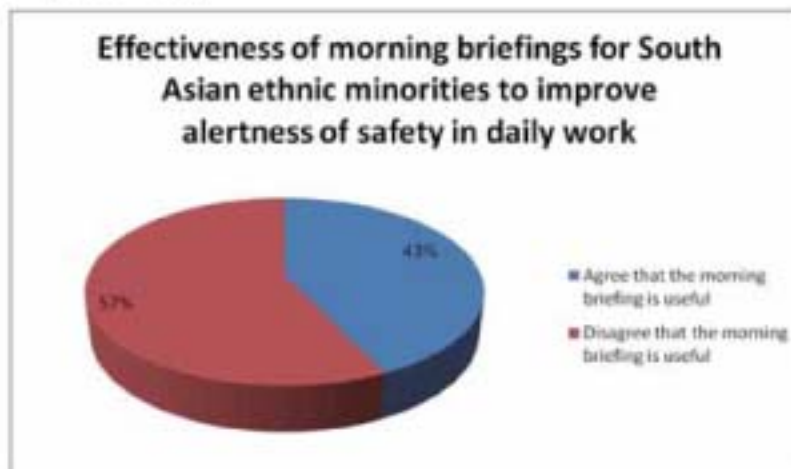


Figure 2: Effectiveness of Morning Briefings for SA

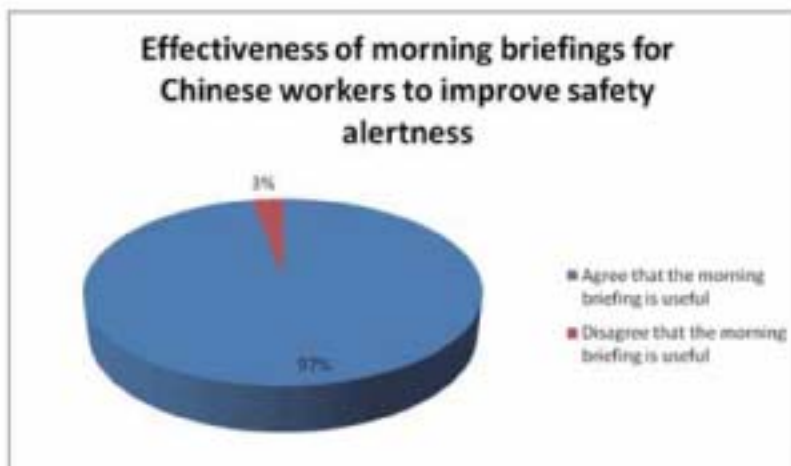


Figure 3: Effectiveness of Morning Briefings for Chinese Workers

Level of understanding safety procedure/ instruction at morning briefings

The above scenario leads to another problem: level of understanding of safety procedure and instructions. There is a big difference between South Asian ethnic minorities and Chinese workers on the level of understanding of safety procedure/ instruction at the morning briefings (see Figure 4). Most Chinese workers have no difficult in understanding the content while few South Asian ethnic minority workers can understand the safety procedure/ instructions.



Figure 4: Level of Understanding of Safety Procedure and Instructions at Morning Briefings

Tendency to follow safety instructions after morning briefings

From the survey, the mean of Chinese workers to follow safety instructions after morning briefings is 4.6 while the mean of SA is 3 (see Figure 5). Discussion with the SA respondents indicates that the main reason for not following the instructions was the incomplete understanding of the safety messages and hence they use their own ways of operation instead. Although both of them are at or above the mean, Chinese workers have a higher tendency to follow the safety instruction after attending the morning briefings.

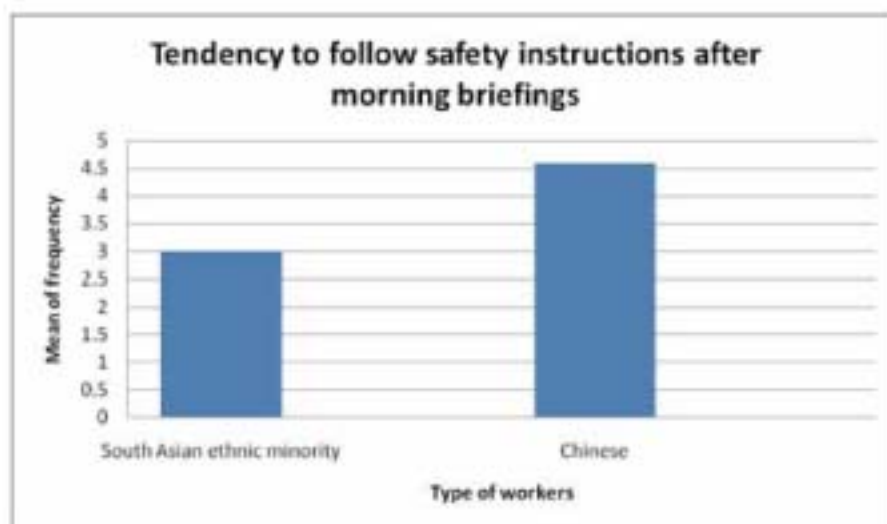


Figure 5: Tendency to Follow Safety Instructions after Morning Briefings

Level of understanding of the statutory safety regulations

Since most SAs are new immigrants, they are not familiar with the social structure and construction practices. As a result, they could not understand any safety promotions/ propaganda initiated by the government and the local legal systems. Hence, very few SAs could fully understand the statutory safety regulations (see Figure 6). Only 27% of them opined that they could understand while 73% did not know these safety regulations. Comparing with that of the Chinese workers (see Figure 7), there is big gap among them.

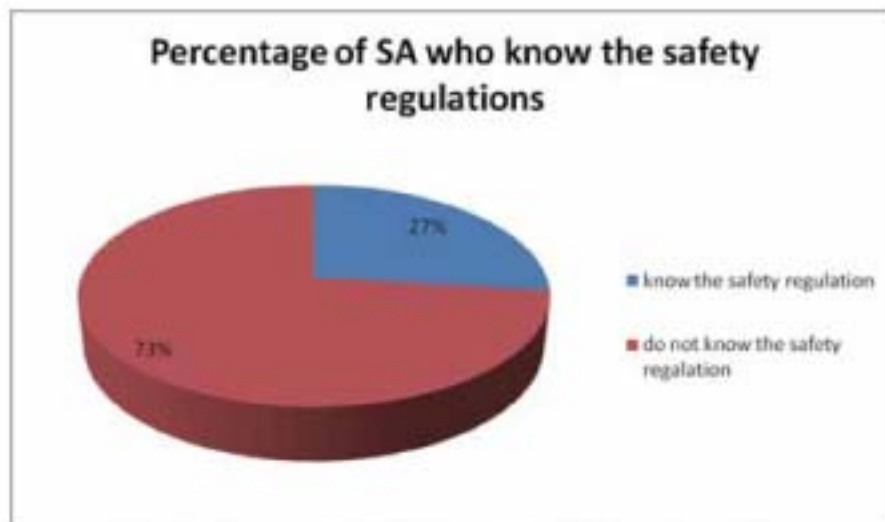


Figure 6: Percentage of SA Understanding the Safety Regulations

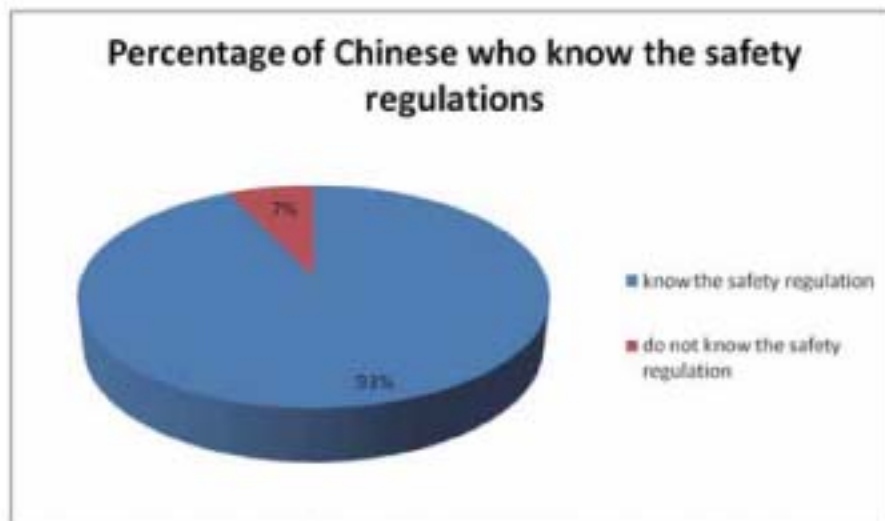


Figure 7: Percentage of Chinese Workers Understanding the Safety Regulations

Tendency of workers reporting to the supervisor when they find something in danger

To be a champion in safety management, every member of the organization should be a supporter of a sound safety culture. Reporting dangerous environment voluntarily to supervisors forms one of the critical behaviors for workers under a proper safety cultural setting. It is noted that Chinese workers are more willing to report dangerous situation when compared to SA, which demonstrates that the SA workers are shy in expression or have the feeling that reporting such incidents may be in vain (see Figure 8). This misconception needs to be expelled in cultivating a proper safety culture.

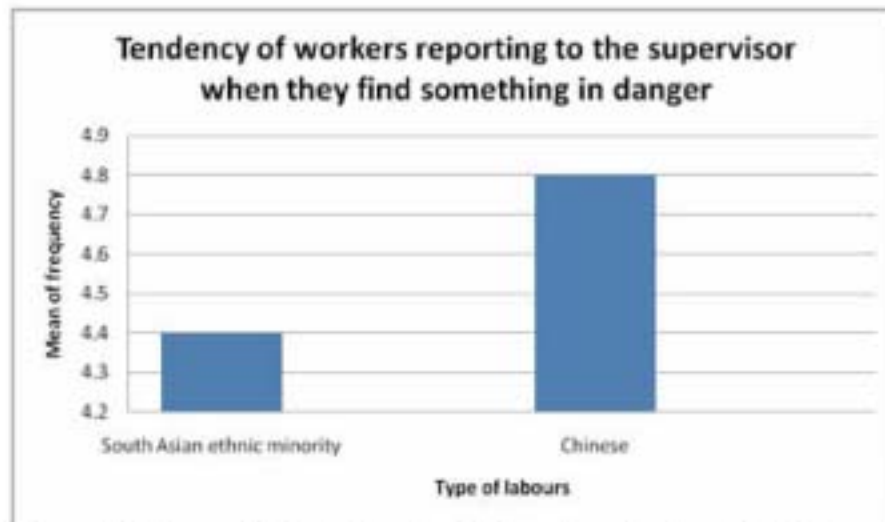


Figure 8: Tendency of Workers Reporting to Supervisor when Something in Danger

Tendency of workers refusing to work when they find the environment is in danger

Workers have the right to refuse unsafe work under most labour regulations. The purpose of this is to ensure that all employees are working in an environment where their health and safety is not in danger. However, owing to the threat of losing their job opportunities, workers sometimes bend to supervisors' instructions. From the survey, it is noted that SAs are less inclined to refuse to work under unsafe conditions (see Figure 9).

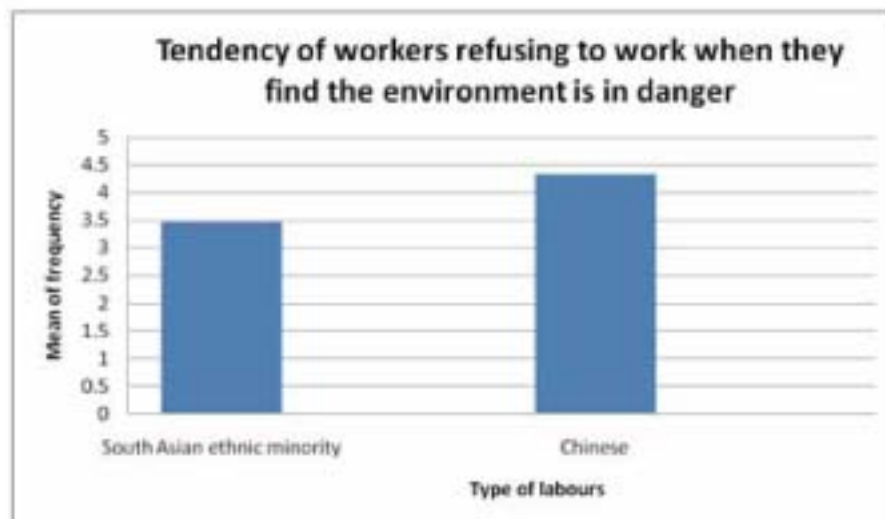


Figure 9: Tendency of Workers Refusing to Work when Environment is in Danger

Reasons for workers continue to work under dangerous environment

Figure 10 summarizes the reasons that workers continue to work under unsafe conditions. There are two reasons that SAs will opt for while Chinese workers will not: Better pay and Make me employable. As SAs have lesser choices in job, they will catch every opportunity to work, especially those higher paid works.

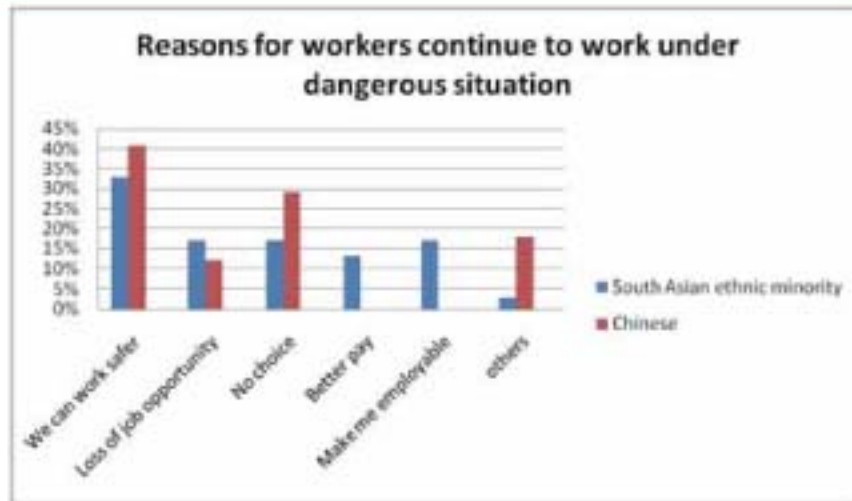


Figure 10: Reasons for Workers Continue to Work under Dangerous Situation

Level of danger of construction work considered by workers

The survey results indicate that both the two types of workers consider construction works to be dangerous (with means above 3). But that of South Asian ethnic minorities is higher than the mean of Chinese workers, indicating that SAs are more worry about construction safety although they have less choice of jobs. (see Figure 11).

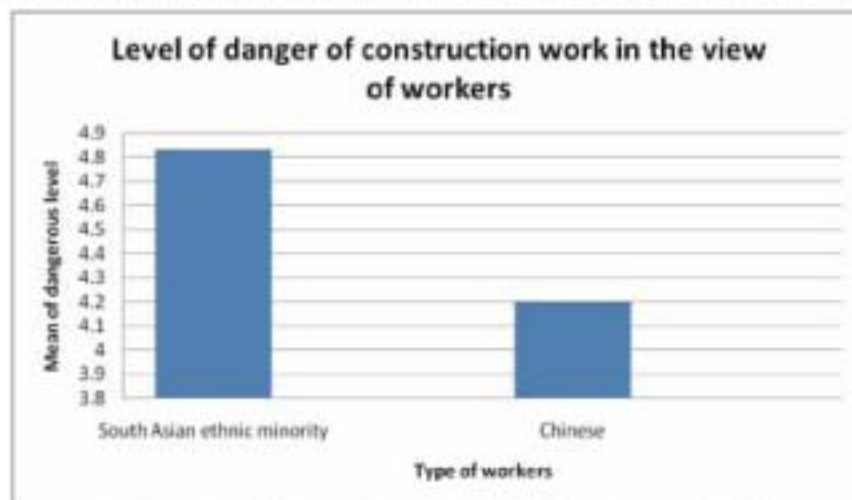


Figure 11: Level of Danger of Construction Work in the View of Workers

Criteria to be considered for workers in job selection

For the SAs, most of them are concerned about the salary, apportioned 60% among the job selection criteria while safety only apportioned 3% in their job selection. For the Chinese workers, the most concerned one is safety, 47% while salary is 23%. The results show a marked difference in the criteria of job selection among them. (see Figure 13).

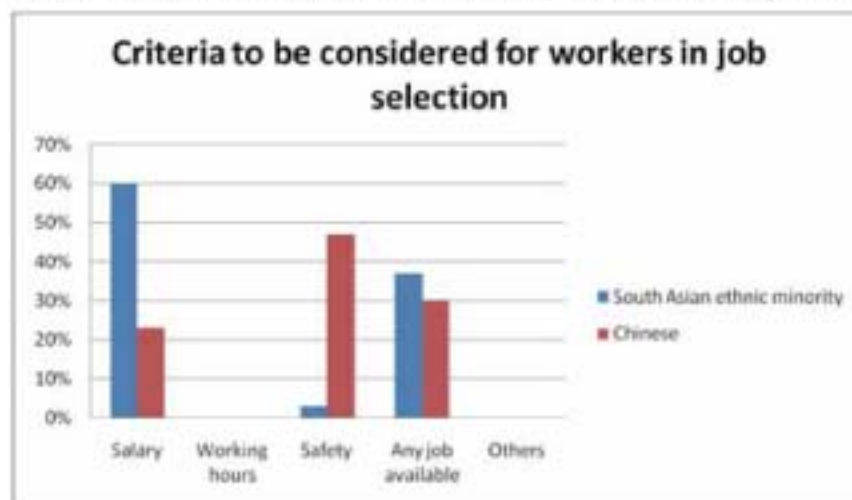


Figure 13: Criteria to be considered for Workers in Job Selection

Working experience on site

Most Chinese workers (73%) are more experienced (more than 5 years in sites), with 13% between 0 — 1 year, 7% between 2 — 3 years and 4 — 5 years. For SAs, the percentages are 37% between 0 — 1 year, 23% between 2 — 3 years and 40% above 5 years. The more experienced Chinese workers thus demonstrate a safer working attitude and a lower accident rate. (see Figure 14).

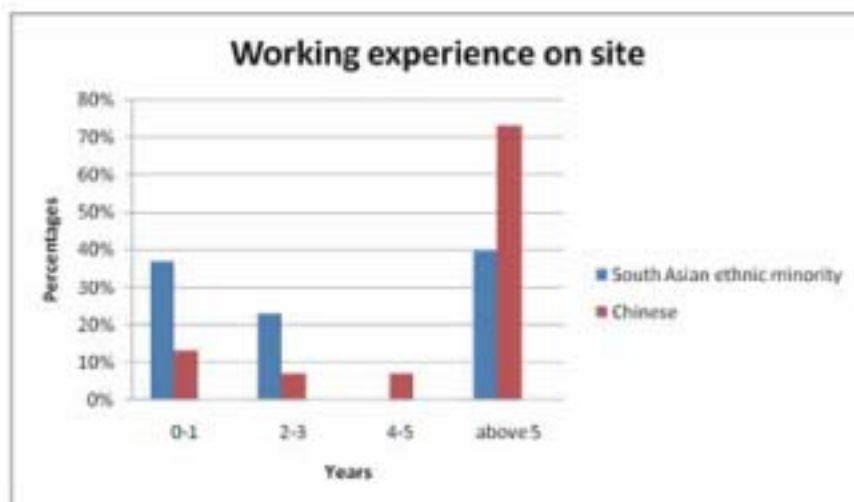


Figure 14: Years of Working Experience

DISCUSSION AND CONCLUSION

The study has unveiled some salient points as shown below:

- ▶ Most of the South Asian ethnic minority workers are new immigrants with high education levels, which are however not recognized in Hong Kong. Therefore, most can only join the construction industry. But their skill levels and experience are low, making them vulnerable to site accidents.
- ▶ Morning briefings are considered effective for workers to arouse their awareness of dangerous site activities over the working day if they could understand the information given. However, most South Asian ethnic minority workers have difficulties in apprehending the information due to their poor proficiency in both Cantonese and English, making them missing some important safety messages.
- ▶ Since most of these South Asian ethnic minorities are new immigrants and they are not familiar with the safety regulations in Hong Kong, they may violate some rules, and in doing so, exposing their co-workers to dangerous conditions.
- ▶ Owing to the communication problem and the threat of losing jobs, most South Asian ethnic minorities are not brave enough to reject works even though they are in dangerous settings.
- ▶ Most South Asian ethnic minorities consider higher wage is more important than safety at work in choosing their trade, which makes them bearing a higher accident rate.
- ▶ These SAs have a lower level of construction experience when compared to the local counterpart. Thus, these people need to receive higher level of guidance and supervision.

With the above observations, some recommendations are suggested to improve the situation:

Provision of induction programme and safety training courses

Before starting to work on site, all workers should have been provided an induction programme and possibly, a training course with a test at the end to ensure that all workers have exposed to the same level of safety knowledge. These courses can improve the safety knowledge of new immigrants as well as the SAs. At the training, it is better to have speakers who use the same language as the trainees.

Mentoring scheme

As most South Asian ethnic minorities have communication problems on site, some senior South Asian ethnic minorities should serve as their mentor for some time on site, offering them some guidance and introducing them to the site practices.

Different section of morning briefings for SAs

The morning briefings should be organized in two sections, one for Chinese and the other for South Asian ethnic minorities. The section for the South Asian ethnic minorities should have a translator to translate the information into their native language.

Promotion of legislation against racial discrimination

Most South Asian ethnic minorities are new immigrants and they are not familiar with the legislation in Hong Kong. Promotion of legislation and law about racial discrimination can inform their rights and alleviate their concern on job security. This could help them speak out in facing unfair treatment and refuse to work at unsafe conditions.

The limitations of this study include the small number of respondents (60) and they all belong to the same contractor. Future works extended to larger number of respondents and more contractors can verify the findings of this study.

REFERENCES AND BIBLIOGRAPHY

"Occupational Safety and Health Statistics Bulletin Issue No. 10 (September 2010)", <http://www.labour.gov.hk/eng/osh/pdf/Bulletin2010.pdf>

"Occupational Safety and Health Statistics 2009", http://www.labour.gov.hk/eng/osh/pdf/IOSH_Statistics_2009.pdf

Cheung, C.M. (2002), "A Study of the Safety Attitudes in Hong Kong Construction Sites", Final Year Project, Department of Building and Construction, City University of Hong Kong

Tse, O.P. (1994), "A Study on the Attitude of Workers to Construction Site Safety in Hong Kong", MSc. Dissertation, MSc. in Construction Management, City Polytechnic of Hong Kong

Poon, K.C. (2002), "Construction Safety and Safety Management in Hong Kong", Master Dissertation, Master of Engineering in Building Engineering, City University of Hong Kong

Yim, H.W. (2002), "A Study of Safety Attitudinal Divergence in a Large-Scaled Construction Project", Master Dissertation, Master of Engineering in Building Engineering, City University of Hong Kong

Chan, C.Y. (1999), "A Study of the Attitude Change of Project Management Team to Site Safety after the Implementation of Supervision Plan" MSc. Dissertation, MSc. in Construction Management, City University of Hong Kong

Chan, K.S. (2001), "A Benchmarking Study of Construction Safety in Hong Kong", MSc. Dissertation, MSc. in Engineering Management, City University of Hong Kong

Tung, C.F. (2004), "Safety Professionals' Perceptions to Risk Assessment of Hong Kong Construction Industry" Master Dissertation, Master of Philosophy, City University of Hong Kong

Ku, H.B., Chan, K.W. and Karamjit, K.S. (2006), "A Research Report on the Employment of South Asian Ethnic Minority Groups in Hong Kong", Centre for Social Policy Studies, Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hong Kong

George, K. (1997), "Construction Foreman's Safety Handbook", Delmar Publisher, U.S.

Laney, J.C. (1982), "Site Safety", Construction Press, New York, U.S.

Lee, H.K. (1996), "Construction Safety in Hong Kong", Lorraineo Concept Design & Project Management LTD., Hong Kong

Mallick, R. (1998), "Development, Ethnicity and Human Rights in South Asia", Sage Publications India Pvt Ltd, U.S.

Joshua, A. F. (1999), "Handbook of Language & Ethnic Identity", Oxford University Press, New York, U.S.

Levitt, R.E. and Sameison, N.M. (1993), "Construction Safety Management", 2th edition, John Wiley & Sons, Inc., U.S.

Rowlinson, S. (1997), "Hong Kong Construction — Site Safety Management", Sweet & Maxwell Asia, Hong Kong

Lingard, H.C. (1995), "Safety in Hong Kong's Construction Industry: Changing Worker Behaviour", Ph.D. thesis, Department of Real Estate and Construction, The University of Hong Kong

Walker, A. and Rowlinson, S. (1990), "The Building of Hong Kong", Hong Kong University Press, Hong Kong

"Race Discrimination Ordinance", Equal Opportunities Commission, <http://www.eoc.org.hk/eoc/GraphicsFolder/showcontent.aspx?content=Race%20Discrimination%20Ordinance%20And%20>