

# The Ageing Construction Workforce in Hong Kong: A Review

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**Abstract**—The scope and extent of public and private sector infrastructure projects in Hong Kong continue to grow rapidly. As a result the construction industry suffers from a shortage of skilled workers to support the ever increasing demands of the industry. Solutions for the manpower deficiency are: to encourage young workers to join the construction industry and to train them; and to retain the older skilled workers already employed in the industry. As at 2013, 12% of registered construction workers were over 60 years of age and therefore had already reached retirement age, and 44% of them were over 50. Obviously the ageing of the population of workers in the construction industry in Hong Kong presents a critical problem requiring an urgent solution.

In order to retain older workers it is necessary to understand the health and safety needs of the aging construction workforce in Hong Kong. In this paper, a review of the ageing construction workforce is presented in order to better understand the needs and abilities of the older worker.

**Index Terms**—Ageing, construction worker, ageing workforce

## I. INTRODUCTION

FOR a variety of reasons increasing numbers of employees are planning to delay their retirement and prolong their working lives [1], [2]. Therefore, it is critical to have an increased understanding of the abilities and health and safety needs of ageing workers [3].

According to Hong Kong Construction Industry Council [4] registration records for construction workers, at the end of 2013, the number in the age group '50 years or over' was 141,000, and the number '60 years or over' was 40,000. The total number of registered construction workers at that time in Hong Kong was 322,000. Over the four years from 2010 to 2013, the registered construction workers in Hong Kong in the age group '50 years or over' was over 40 per cent of the total registered construction workers. From 2011 to 2013, 44 per cent of the total registered construction workers were in the age group '50 years or over'. This ageing of the construction workforce is becoming an increasingly challenging issue for the Hong Kong construction industry and it is a challenge worth dealing with because there are many positive aspects to retaining the older construction workers in the industry. Retaining the ageing worker in the workforce will not only be beneficial to the construction

industry because they are the skilled and experienced workers, but also because they are needed to help solve the manpower shortage. Employers would like to retain the ageing construction workforce in the industry because the older workers have accumulated valuable job-related experience and skill sets which may continue to contribute to the companies [5].

If older construction workers are willing to delay their retirement and stay in the industry, there is little doubt about the positive value of their contribution to the industry, however, there are some challenges, especially regarding age related injuries. The following four problems show that there is a need to address the issue of age related injuries in the construction industry workforce. Firstly, one of the features in the construction industry is that much of the work is heavy and physically demanding [6]. Secondly, injuries and ill-health among construction workers are more costly than for other industries [7]. Thirdly, many construction workers suffer from chronic health conditions which stay with them for the rest of their lives whether they continue to work in the construction site or leave the industry [8]. Lastly, construction workers of 50 or over are reported to be at higher risk of injury compared to younger workers [3]. It is believed that this increased risk is most likely due to the decline of physical abilities and capabilities of older workers [9].

## II. REVIEW

### A. An Ageing Population

The rapid ageing of the world population is a major global demographic trend [10]. Older people (aged 60 years or over) of the world increased from 9 per cent in 1990 and is expected to continue to grow and reach 21 per cent by 2050. The number of older people is expected to more than double from 840 million people in 2013 to over 2 billion in 2050 [10].

In Hong Kong, apart from the regulation of the retirement age of civil servants, there are other ordinances which regulate the retirement age of some employees according to their profession and industry, including the Security and Guarding Services Ordinance (Cap. 460), the Pilotage Ordinance (Cap. 84) and the Education Ordinance (Cap. 279). However, unlike for the above mentioned industries, for many industries in Hong Kong, retirement age is not defined or bounded by ordinances and/or regulations and there is no typical retirement age. This lack of regulation is one reason for ageing workers to be willing, or can be encouraged, to extend their working lives and thereby improve their financial situation [11].

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*B. An Ageing Workforce in the Hong Kong Construction Industry*

In the coming 5 years from 2015 to 2020, it is anticipated that the ageing challenge will become more and more serious for the Hong Kong construction industry. Due to the many construction projects that have been announced, a severe labour force shortage is expected in the industry. According to the figures of the Construction Workers Registration Authority, as at the end of 2013, over 44 per cent of the registered construction workers were aged over 50. This age group of workers will all reach retirement age sometime within the next 10 years when they reach 60 [4].

At the end of 2013, 12 per cent of the registered construction workers were over 60 and therefore have already reached retirement age. However, they are still in the industry which provides something of a partial temporary solution to the manpower shortage. These older construction workers will eventually leave the industry; it is just a matter of time before they retire from their jobs. Then there will be far fewer younger workers to fill those roles.

According to construction workers' registration record [4], the breakdown of workers by age groups over the past five years is given in the Table I:

Table I

Breakdown of workers by age groups

Age Group	Number of Registered Construction Workers				
	As at end 2009	As at end 2010	As at end 2011	As at end 2012	As at end 2013
Under 20	3000	1000	1000	1000	1000
20 to 29	34000	31000	35000	38000	42000
30 to 39	54000	51000	54000	57000	58000
40 to 49	79000	71000	72000	76000	80000
50 to 59	81000	87000	95000	99000	101000
60 or over	17000	24000	30000	34000	40000
Total	268000	265000	287000	305000	322000

(Source: Report on the Construction Manpower, Construction Industry Council Hong Kong 2014)

*C. Physical Ageing*

The decline in physical fitness, cognitive abilities and sensory perception are the three key benchmarks of ageing [12]. For the ageing workers, these age-related declines will lead them to experience difficulties in their lives generally but things will be especially difficult for those in the construction industry which places great physical demands on them in areas such as joint mobility, manual dexterity, muscular strength and endurance [5]. Heavy physically demanding activity is an inherent part of work in the construction industry. Unfortunately decline in performance and of physical ability is associated with normal ageing. It was reported that 'muscular strength tends to peak between the second and third decades and remains the same until about 45 to 50 years of age in men' [14].

*D. Ageing in the Construction Industry*

Construction jobs are generally more physically demanding [5] than jobs in most other industries. Construction workers are considered to be at greater risk of work related injuries and ill-health problems than most other workers. Common problems for construction workers include losing hearing, musculoskeletal disorders (MSDs), pneumoconiosis, and fractures and sprains [15], [16]. Age-related problems are more likely to occur in the construction industry due to the nature of the jobs in that industry. Compared to younger construction workers, the workers of 50 or over are at higher risk of injury at work [17] [18].

Declining physical abilities are especially problematic in the construction industry due to the heavy physical workloads. The normal ageing process will be more associated with health problems for employees working in the physical demanding industries, such as construction [5]. Over a long period of time, heavy physical workloads will cause physical deterioration [19]. The most common work-related ill-health conditions are MSDs [20]. Physically strenuous work and heavy physical workloads such as moving and carrying heavy tools or objects are associated with a critically higher risk of MSDs and other forms of disorders [21].

A study in Geneva on early retirement rates [22] showed that the major reason for early retirement for construction workers was because of problems associated with poor health and/or permanent disability affecting ability to work. In terms of occupational health and safety issues, the same study found that only 57 per cent of the older construction workers (aged 65 or above) were able to continue working. The others had to leave the industry due to the work incapacity or problems associated with poor health. The study also found that in other industries, an average of 75 per cent of older employees (aged 65 or above) were able to continue working. Another study in Ireland [23] of the early retirement rates for construction workers also showed that the most common causes of the early retirement were related to problems caused by ill-health, and the problems highlighted were conditions such as cardiovascular disease (31 per cent), MSDs (30 per cent) and hypertension (16 per cent). These two studies clearly show that the construction industry does not provide an easy environment for older workers. However, In Hong Kong, there have been no relevant studies or related topic papers published on early retirement in the construction sector.

*E. The Current Hong Kong Construction Industry*

In 2007, the Hong Kong Government announced ten major infrastructure projects which will create large additions to public sector infrastructure and facilitate growth in the construction industry. Apart from the ten infrastructure projects, there are many other construction projects launched in Hong Kong such as Operation Building Bright, Revitalising Historic Buildings, the third runway and further construction project of the Hong Kong International Airport [25]. It was reported that estimated growth rate for jobs in the construction industry increased by 13 per cent per year from 2011 to 2013 [24]. This rate is likely to continue or even increase due to the continuous growth of public and private

sector infrastructure projects in Hong Kong. However, the construction industry is already suffering shortages of skilled workers and this situation is likely to be exacerbated by ever increasing demands on the industry. To attract young workers to join the construction industry and retain older skilled workers in the industry can provide part of the solution to the manpower shortage in the short term in Hong Kong construction industry.

### III. IMPORTANCE OF AGEING CONSTRUCTION WORKER STUDY

Early retirement and job loss for older construction workers are mainly as a result of work-related health problems [26]. Through redesign of the work process and the use of the specialized tools and equipment, such as hand tools and access equipment, problems associated with poor health due to heavy physical demanding can be addressed and mitigated for construction workers [27]. Better design for work processes, tools and equipment can reduce physical workloads and improve general working conditions for older workers so as to better match their abilities.

It was suggested that there are three general ways of reducing MSDs: using tools and aids to reduce repetitive tasks activities; keeping motion within acceptable range to reduce joint movement; and using mechanical equipment to reduce the need for the application of excessive force by the workers [28]. The reduction of work related injuries, and problems associated with poor health and thus the likelihood of early retirement are the expected outcomes after implementation of such measures.

To properly identify susceptible populations, such as ageing workers, and characterize their injuries in terms of cause, type, and severity (i.e., cost) [3] would definitely help the understanding of injuries in the construction industry and facilitate the formulation of the precautionary measures to be taken. Older construction workers may not be in a position to choose less physically demanding work and may not be willing to reduce their work hours because of the reduction of their pension and financial benefits [29]. As a result, older workers will face a difficult decision, especially in terms of their financial position, when deciding whether or not to remain in the industry [29]. If they continue in the workforce for financial reasons, older workers may eventually have to accept that they are unable to continue to perform the same activities as their younger counterparts. The older construction workers will experience the physical changes associated the normal ageing. Such changes will make it more difficult to perform certain tasks, especially heavy physically work [30].

As a result of the ageing process, older workers are susceptible to loss of muscle mass and subsequent decreases in strength [31]. Another characteristic of the ageing process is change of body shape and weight, and the common forms of health conditions of older workers include diabetes, reduced flexibility and mobility, and hypertension [32]. Physical changes due to the ageing process can lead many challenges for the older worker when they perform their daily tasks, especially if they are to work in a physically demanding

industry such as the construction industry without incurring injury [3]. To understand the occupational health and safety needs of the aging workforce will be of significant importance, especially in the construction industry where jobs involve heavy physical workloads and are of a generally demanding nature.

### IV. FUTURE WORK

In the context of currently published literature, it is proposed here that future study should investigate the causes and types of injuries as well as the associated costs associated with the older workforce in the Hong Kong construction industry. It is also proposed that the outcomes of the study should be used to evaluate any trends for injuries to the older workers.

Characterization of the causes and types of work related injuries to the ageing construction workforce in Hong Kong is an area where there is a knowledge gap in occupational studies. The data for ageing construction worker injuries is needed to design targeted measures to prevent such occupational injuries to older construction workers, to prolong their careers and reduce injury costs [33], [34].

In the past, researchers have used the Work Ability Index which is 'a tool for occupational health research and practice' [13] to predict sickness absence [35] and disability for ageing workers [36] in the construction industry. However, in Hong Kong, there has been no attempt to use such an index and this sort of study should be undertaken. The aim of these proposals is to improve the work situation for older construction workers in Hong Kong in order to provide a safe working environment and to extend their working lives.

### V. CONCLUSION

There is a gap in the study of older workers in the Hong Kong construction industry in that the Work Ability Index and the promotion of its use have not been studied. However, the Work Ability Index could be a useful guide for the future work which focuses on ageing construction workers in Hong Kong.

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