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**DEVELOPING CONSTRUCTION INDUSTRY HUMAN RESOURCES IN INDONESIA:
EMPOWERING THE INFORMAL CONSTRUCTION SECTOR FOREMAN FOR THE
INDUSTRY**

Biemo W Soemardi

b.soemardi@gmail.com

Chair,

Committee of Research and Development,

National Construction Services Development Board

Krishna S Pribadi

kspribadi@gmail.com

Deputy Chairman II,

National Construction Services Development Board

INDONESIA

DEVELOPING CONSTRUCTION INDUSTRY HUMAN RESOURCES IN INDONESIA: EMPOWERING THE INFORMAL CONSTRUCTION SECTOR FOREMAN FOR THE INDUSTRY¹

Abstract

As the global construction industry is shifting toward more application of modern approach of construction, more and more practices of construction in Indonesia are also gradually replacing its traditional labor-based construction method to employing modern technology. Due to the magnitude and the complexity, many construction projects are now utilizing modern and sophisticated machinery and equipment. Yet, the success of such changes in construction practices remains dependent upon the people who plan, design and, most importantly, manage and operate the equipment and machineries.

In today's construction industry foremen are often regarded as the most important agent in the construction operation. As the key linkage between the management and the workforce, foremen are expected to manage the work and the workforces in achieving the project goals at the operation levels, such as improvement of productivity, as well as safety and quality of works. In Indonesian construction industry, foremen are traditionally considered as informal leaders with strong social and emotional bind with their fellow workers. Such a unique position, foremen play important role in reshaping workers attitude toward work. With the shifting from traditional to a more modern construction method and technology, many believe that the industry can make use foremen's key role for the improvement of the construction industry.

This paper describes attempts to bring forward the role of foremen as potential agent of change in the construction industry. This paper argues that there should be policy and mechanism developed that will enable to facilitate the changing role of foremen, from traditional informal leader of group of labors into formal modern construction human resource elements.

Keywords: foremen, labor, construction,

¹ This paper was developed based on previous works by the author

1. Introduction

Construction for long has been recognized as a labor-intensive industry, where human resource is considered as the most valuable asset. It means that the success of this industry depends largely on how to manage and utilize its human resources. At the same time, the construction industry has gained the reputation of being one with the most challenging and demanding, with still many opportunities for productivity improvement. Improvement in productivity will not only lead to significant cost and time savings but also consequently can have a large overall impact on the efficiency and effectiveness of the construction industry. There are many factors that influence the level of construction productivity, and among other factors, labor holds a strategic role for productivity increase of any organization, and this makes it superior in the industrial competition (Kazaz et al, 2008).

Labor constitutes a large part of the construction cost and the quantity of labor hours in performing a task in construction is more susceptible to the influence of management than are materials or capital (Khoramshahi et al, 2006). Thus, improvement of labor role should be a major and continual concern of those who are involved in the construction industry. In construction, it is the people that realize the buildings, not the machine or the money. As the construction industry is project based in nature, and construction projects are following where the buildings and infrastructure are constructed, people in the construction industry tend to move with the project location. The nature of construction industry is such that the product and services are mostly unique, delivered through projects in an open environment, usually awarded in short notice, in a male dominated culture. It is characterized by a temporary workforce consisting of a core of construction professional, usually permanent employees in nature, surrounded by a layer of semi-professional workforce which are usually employed on a project basis, and supported by a large number of outsourced and casual worker, skilled and unskilled. In term of skill level, they are extremely diverse and include different types of individuals working within construction such as; unskilled, skilled workers, craft, technician and engineers, managerial roles and administrative workers.

2. Role of Informal Sector Foreman in Indonesian Construction Industry

Despite the promising growth of the industry, little has changed that reflects the improvement of workers' pool in the Indonesian construction industry. For instance, their

education remains low, more than 50% of all construction workers are only elementary school graduates or less. Even worse, 1.5% of them had never received any formal education at all (Soemardi, et al. 2010). What is more, the poor quality of construction worker is also reflected in the significantly low number of skilled trade workers who have been registered and certified, about 352 thousands (LPJKN, 2017) compared to 8.1 millions of people working in construction according to the Central Bureau of Statistic (Annon., 2017), meaning that the rest are unregulated and can be considered as part of the informal sector worker. The CIB/TG29 defined the informal sector of construction industry as : “..unregulated and unprotected individuals and enterprises engaged in economic activities in construction, including the supply of labour and production of building materials and components for both the formal construction sector and directly in response to client needs” (Wells, 2007). In addition, the number of permanent workers in the construction industry is much less than the total number of workers, in 2016 there were only 979.772 permanent workers in the industry, indicating that most of the construction industry workers are casual workers (Annon., 2017)

In Indonesian construction industry, traditional construction labors are not workers by trade. Traditionally, especially in Java, construction workers came from agriculture sectors (Syahrir, 1995). In general, after harvesting their crops, most farmers would leave their fields to look for temporary jobs in the city while waiting for next planting seasons. When construction work is over, they will return to the village to farming. Like most villagers, they only have little or no formal education, and because they are not equipped with other skill but farming, their construction skill is limited to hard labors in excavation or other simple task, such as server for skill (trade) workers. Through years of apprenticeship some of these workers manage to climb up to become skilled workers, such as mason, carpenter, or steel workers. However, the majority remains as hard workers.

To improve the quality of such construction worker pool is a very difficult task for both the government and the industry, and perhaps a strategic approach will be to identify and utilize the most influential elements of the construction worker pool. In this case, the industry can make the most of the role and function of the traditional construction foreman as the key to improve worker management.

In Indonesia typically construction foremen recruit these workers from villages. These foremen are actually informal sector entrepreneurs, many of whom are also relatives or

having closed tie with workers, and are responsible to bringing the workers from the village to the construction sites in the cities. These workers do not have direct or formal contract with the construction company.. Instead, foremen make contract on behalf of his group of workers, either on the forms of lump sum or unit price contract. Therefore, the method of works and productivity will depend on a type of agreement between foremen and the construction company. As traditionally the contract is often just a verbal agreement without any written contract, it can also be classified as part of the informal construction. In Indonesia, these foremen are often called as *mandor*. These practices are actually present in many other countries, due to the various factors such as increased competition, declining workloads, restrictive employment regulations, which led to reduction of permanent workforce and replacing them with recruited workers on a casual basis (Wells, 2007). In Korea this foreman is called *oyaji* (father), in Nepal called *naikha*, in Malaysia it is called *kepala*, in Brazil it is called *gato* (cat) (Lukiyanto, 2016).

In Indonesia, this *mandor* or foreman is regarded as a person responsible for a group of workers. As informal leaders with strong social and emotional bind with their fellow workers, foremen play important role in reshaping workers attitude toward work. In the past, although this practice remains widely exist, foremen were usually hired to supervise the construction of simple housing or other simple structures. Chana in (Wells, 2007) argued that in developing countries, this informal construction group provides almost all construction in the rural areas and 50% of the housing in the urban areas. In a typical housing construction, a foreman entered an agreement with the homeowner-to-be to deliver the house. The foreman will lead, manage, and supervise a group of different trade workers to work in harmony to complete the project. It is also not uncommon that foreman also is responsible for purchasing materials. In short, foremen play the role of (trade) contractors. Lukiyanto (2016) argued that while the relationship between *mandors* and contractors is typically as subcontractors to contractor, the relationship between mandors and the workers within the construction group is more like a reciprocal patron-client types, the mandor being the patron while the workers are his/her clients that need to be cared in order they can dedicate their efforts for the benefit of the patron.

In the construction sites outside of Java Island, the responsibility of the foremen is even more difficult. Due to inadequate supply of local workers, those from Java Island are often found in construction projects. Because of their skills and experiences, many construction companies imported workers from Java to work in their projects outside Java Island. Here,

the projects demand foremen to be capable of accommodating cultural differences amongst workers. In recent years, where most of rice fields are depleting due to conversion into other land use, the number of farmers who choose to return to farming considerably reduced. Unfortunately, due to their lack of education and skill, most of the construction workers remain as free workers, who work from one project to another as hard labor.

Today, the involvement of *mandor* in the formal construction sector has evolved considerably. In today's construction industry foremen are often regarded as the most important agent in the construction operation with the shifting from traditional to a more modern construction method and technology, many believe that the industry can make use *mandor's* key role for the improvement of the construction industry. As the key linkage between the management and the workforce, *mandors* are expected to manage the work and the workforces in achieving the project goals at the operation levels, such as improvement of productivity, and play important role in workers' performance, as well as safety and quality of works, where a well-planned accident prevention program shall also lead to increase in construction productivity. At project level, contractor can assign *mandors* to some of safety officer's responsibility in charge of safety measures. The construction company can employ *mandors* (foremen) as its temporary partner to effectively disseminating company policy concerning construction safety issues. Meanwhile, at the national level, the industry and government must also recognize the strategic position of these *mandors*. Together with the government, the industry can empower *mandors* and make use of them as agent of change for the construction workers.

Due to a very central role in the implementation of construction projects, ideally foremen should have a good working competence. Competence is often used to reflect one's ability in certain fields such as verbal communication, presentation skills, technical knowledge, stress control, planning and decision-making ability. Each role in any working requires respective competency and these needs are evolving over time. But keep in mind that the competence of a person is not only determined by the knowledge, skills and experience, there is another side of someone who is influential to the competence of the person.

According to the very important role of foremen, it is necessary to increase foremen competency of both the hard competencies (hard skills) and soft competencies (soft skills). Meanwhile, nowadays more attention is giving to increase hard skills competency. However, the effectiveness of improvement foremen' hard skill is influenced by their soft skills. So, effort to increase the hard skill must be accompanied by improving their soft skills

too. To do this, profile of foremen competency is needed to obtain information about the current description of their soft skills. Measurement of foremen competency can be initiated by developing competency model first. Competency model is a collection, or a combination of the competencies required to perform a role in the organization effectively and may become as a standard reflecting the expected level for performance (Spencer and Spencer, 1993).

3. Role and Function of *Mandor* in Construction Human Resource Structure

Although there are similarities between traditional *mandors* and current foreman in a formal, modern construction project, there are differences in terms of their role and responsibility. Raharjo and Bermawi(2014) in (Lukiyanto, 2016) summarized the differences in Table 1.

A study on foremen competency (Soemardi et al, 2011) showed profiles of competence required for foreman, which is grouped into the following categories: achievement and action, helping and human service, impact and influence, managerial, and cognitive competences, as shown in Table 2. Result from this study indicated that the most demanded competence for foreman position is the dimension of information seeking. Playing as central role in construction project, a foreman is expected to excel in communication in a variety of information through top-down and bottom-up structure.

Table 1 Differences between Mandor and Foremen

Task	<i>Mandor</i>	Foremen
Administering works	√	√
Prepare workers' schedule	√	√
Supervising workers	√	√
Reporting	√	√
Selecting materials		√
Recruiting workers	√	
Training workers	√	
Paying wages	√	

Source : Raharjo and Bermawi (2014) in (Lukiyanto, 2016)

Table 2: Scope of Work for *Mandor* in Construction Project

No	Scope of Works	Skill and Ability	Dimention of Competency
		Knowing information about the areas of construction labor suppliers, particularly for specialized jobs.	Information Seeking
1	Labor recruitment	Maintaining good relationship with each worker in their work, so they will be going back to work in the next project.	Relationship Building
		Ability to select any workers in order to obtain good and competent employee.	Concern for Order, Quality and Accuracy
2	Understanding the shop drawings	Understanding basic mathematic especially geometry and symbols that exist in technical drawings	Profesional Expertise
		Finding information on the characteristic of the construction materials listed in the picture.	Information Seeking
3	Supervise field activities	Knowing the quality of a job.	Profesional Expertise
		Ability to coordinate and manage worker activities in the field consistently	Tim Work and Cooperation
4	Estimating the cost and labor requirements, and determine of work system	The ability to do engineering work Analyses risks	Conceptual Analytical
		The ability to make cost estimation	Information Seeking
		Having the character as a leader.	Team Leadership
		Ability to work in groups, as well as conduct cooperation in the group.	Tim Work and Cooperation
5	Leading the group of workers at field	The ability to give orders to his Having a desire to teach / encourage others in their work	Directiveness Developing Others
		Understand the working relationship between foremen and worker and between foremen and contractor.	Organization Awareness

		Ability to understand the desire / the need from workers and contractors, whether written or unwritten	Interpersonal Understanding
		Has the initiative in working, both to improve work effectiveness and convenience in the workplace	Initiative
6	Providing advice on construction techniques based on his experiences	Having the ability in engineering that can be gained from training or from their experiences	Professional Expertise
		Having the ability in engineering that can be gained from training or from their experiences	Analytical Thinking
7	To analyze and to solve problems in implementation of the work and to report mistakes and errors finding in the shop drawings and construction techniques are being implemented	Consistent in carrying out various things that exist in the working procedures that have been determined.	Concern for Order, Quality and Accuracy
8	To manage working tools	Ability to command and coordinate subordinates in the use and care for a variety of work equipment	Directiveness
9	Interpret all company policies to workers	Understanding the various messages from the company, either verbal or non-verbal	Interpersonal Understanding
10	Initiates personnel actions, including ensuring the welfare of subordinates.	Looking for information on a variety of purposes which are needed by subordinates	Information Seeking
		Understanding the various needs of subordinates	Interpersonal Understanding
11	Financial management in small scale	Having efforts to always develop the abilities and skills of their subordinates	Developing Others
		Managing financial in small scale.	Professional Expertise

		Looking for information about arrears owned by subordinates in order to prevent fraud that can lead to conflict.	Information Seeking
		in carrying out the job as a foreman with implementing prevailing any rules and work culture	Organization Awareness
12	Protecting the working relationship between management and workers	Ability to communicate and understand the relationships between contractors as employers, and workers as subordinates.	Interpersonal Understanding

Further, this study also determined 10 main role categories or foremen's role in construction workforce; figure head, leader, liaison, monitor, disseminator, spokesman, entrepreneur, disturbance handler, resource allocator, and negotiator. These ten roles are then grouped into three major managerial roles. Interpersonal role is reflected by the roles of foremen as figurehead, leader, and liaison. Informational role is reflected in monitor, disseminator, and spokesman, whereas major managerial role of decision maker is reflected in entrepreneur, disturbance handler, resource allocator and negotiator, to reflect 4 aspects of managerial capability: planning, organizing, actuating, and controlling. The study has shown that contractors tend to expect foreman to play high informational role. Such a notion was reflected on high degree of expectation on foremen' role as monitor, disseminator and spokesman. Contractors seem to expect foremen be their subordinates that play important role as the key person who will convey all top-down flow of information to the workers. This expectation is in contrast to what the foreman thought. This study suggests that strong interpersonal role seems to be consistent with foremen' traditional role as the informal leader and work-provider for their men. In can be concluded that foremen' competence profile would have a great influence in helping the Indonesian construction industry to shift from a traditional simple construction work to a more complex construction project, which calls for foremen to enhance their perspective on roles and functions.

4. Empowering Role and Function of *Mandor* in Construction Human Resource Structure

While traditional roles of foremen may remain unchanged in much of urban area, in the modern cities the trend is changing. In a modern construction area, where mobility of workers is high, foreman (*mandors*) can no longer play the role of supplier of workers or sub-contractor but are expected to become part of the contractor's project organization. This position enables foremen to be assigned as true professional foremen that lead a group of workers whom they do not have closed traditional relationship. Further, the industry must then realize that expecting *mandor* to become a professional foreman entails enhancement on both technical and managerial skills, as well as fulfillment of registration and certification.

With the shifting of construction practices from informal to a more formal, modern construction method and technology, the role and responsibility of foremen have changed as well. Today most foremen's works are not limited to individual simple housing construction, but expanding to more complex constructions, such as high-rise building or other complex structures. Here, they are no longer act as independent (informal) (sub)contractors but be part of the overall contractor workforce. Foremen no longer function as the center of the whole construction process but becoming foremen for a group of construction workers. In spite of everything, many continue to believe that the industry can make use foremen key role for the improvement of the construction industry. As the key linkage between the management and the workforce, foremen are expected to manage the work and the workforces in achieving the project goals at the operation levels, such as improvement of productivity, and play important role in workers' performance, as well as safety and quality of works, where a well-planned accident prevention program shall also lead to increase in construction productivity (Soemardi et al. 2010).

Unlike traditional foreman-labor relationship in most private simple residential construction in an informal construction setting, in most modern construction projects *mandor* are now hired by the contractor for different role. As regular foremen they are no longer responsible for recruiting and hiring their crew, instead supervising the work of crews hired directly by the contractor. In this case, traditional values that are built upon strong personal social and emotional binds are no longer dominate, and professional relationships are developed based on professional competence. Therefore, the competence of a foreman needs to be shifted too toward more technical skill mastery. A *mandor* can no longer be all-rounder,

handling almost all aspect of construction. To become a foreman, he or she shall not only be able to deal with a more complex modern tasks, he or she must also adapt to new sophisticated instrument and equipment.

5. Role of Foremen in Community-based Construction Program

Despite the evolving character of the current foremen, from traditional, informal sector worker into more modern foremen in the formal construction industry, there are still a huge need to maintain and develop the traditional *mandor* in the informal construction sector setting to serve the need of the country. Many situations where the traditional construction groups are needed is to provide services to rural areas house-owners in building and repairing their houses, rural infrastructure development programs where community contracting is mostly implemented by mobilizing local village community (Tournee & van Esch, 2001) (Pribadi, 2004) (Pribadi & Yasri, 2005), and in post-disaster housing recovery programs through various approached such as ReKompak program for people centered housing recovery (World Bank, 2012) (Maly, 2017).

The community based housing recovery program has been proven to be effective in various post-disaster recovery situation in Indonesia such as the Great Tsunami of 2004 in Aceh, Central Java Earthquake in 2006, West Sumatra Earthquake in 2009, and currently also implemented in Lombok Island Earthquake, 2018. Another example of the role the informal construction groups led by *mandors* is in the repair and building works of local schools, religious buildings and other local common facilities. In particular for local elementary public schools, the Government of Indonesia implemented a scheme of community based school construction through provision of block grants to school committees and these committees assign local informal construction groups led by *mandors*. play important role in providing construction service to house owners and local communities (when local rural infrastructure is concerned). They acts as small-scale contractors to the service of local community, where the *mandors* act as an entrepreneur developing their businesses. Beside government funding, these rural and semi rural construction is also often funded by various non-government donors. Basically as long as the project characteristics continue to be simple and rely on simple labor skills, the needs for this type of foremen with traditional *mandor*-labor approach will remain strong.

5. Conclusion

It is apparent that the role of foremen in Indonesian construction industry will evolve continuously following the formalization of the construction sector. For most, being a foreman means enhancing the technical and managerial skill at the level that acceptable to modern construction practices. On the other hand, for those who opt to remain a *mandor* must also enhance their technical skill so that meeting the minimum competence for working in the industry. Like their foremen counterpart, as mandated by the law, *mandor* must also be licensed before practicing any construction works, which also means that *mandor* will also enter into formal construction sector.

Nevertheless, the informal sector construction groups characterized by the traditional *mandor*-workers relationship will still be around for quite long time to serve the more informal housing construction system in the rural areas as well as the rural infrastructure provision in remote villages. On the other side, the use of traditional type *mandor* in relation with the urban formal sector contractors will still be present as a way of minimizing the number of permanent workers to deal with the fluctuating construction market as well as the increasing competition in the industry, at least for less complicated construction projects.

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