

Skilled Workforce in Sri Lankan Construction Industry: Production Vs. Acceptance

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Abstract

The quality of workforce is one of the major determinants of the organisational success which ultimately lead to competitive advantage. Being predominantly a labour intensive industry, construction gets high benefits from the skilled workers. In this regard, effective training programs to enhance the skill levels of the workers are of paramount importance in the construction industry. This research was undertaken to unearth the answer to the research question of “how the skilled labour production is catered for the acceptance in Sri Lankan construction industry”. A desk study was carried out to find training courses which are available for construction trades. Accordingly various training programs for different trades were identified which are conducted by five key training institutes, viz. ICTAD, NAITA, DTET, VTA and CCI. A questionnaire survey was conducted among 77 recruitment officers in medium to large size contracting firms and 34 subcontractors in six distinct trades. The findings suggested that when recruiting workers who belong to trades such as plumbing and electrical, the contractors gave extra concern to their training qualifications. However, when it comes to trades such as masonry, carpentry, bar bending and painting the contractors’ consideration on training qualification was at a lower level. The study further revealed that HR managers were more knowledgeable about training institutes than the Site Engineers or the PMs.

Keywords: Contractors, Recruitment, Skilled workforce, Sri Lanka, Training

1. Background

1.1 Skilled Workforce

In contracting organisations it is evident that there are number of groups of people who have special skills that are essentially needed for the construction processes. One of the groups that were less discussed than others is skilled workforce or tradesmen. They are crucial, because without them Architect’s concepts and Engineer’s designs would not be a reality. According to

Tradesmen [1] “A tradesman is a skill manual worker in a particular trade or craft. Economically and socially, a tradesman’s status is considered between labourer and a professional with a high degree of both practical and theoretical knowledge of their trade”. Skilled trades’ workers have always been a benefit to a local economy. They are instrumental in turning materials into useful items. Their training, expertise and experience have helped craft products and build industries [2]. When it comes to construction phase, the performance of skilled workforce is one of critical factors to the success of any construction project. For the year 2003, it is estimated that the direct labour engaged in the construction industry is around 330,000 while the total labour force of all industries is 6.9 million and, the contribution to the Gross Domestic Product by the construction industry sector was 6.97% in Sri Lanka [2].

According to Gunawardane and Jayawardena [4] Sri Lankan construction industry is dominated by unskilled workers and has only six traditional skills as shown in the figure-1. In addition they further stated that Sri Lankan workers are “all rounder” within their broad field. For example masons very often do all work related their trade such as brick laying, concreting, plumbing, plastering, tiling, scaffolding and even bar bending. When it comes to carpenters often erect formwork and false work, fabricate door and window frames, fit glazing and so forth. These practices are common in building projects.

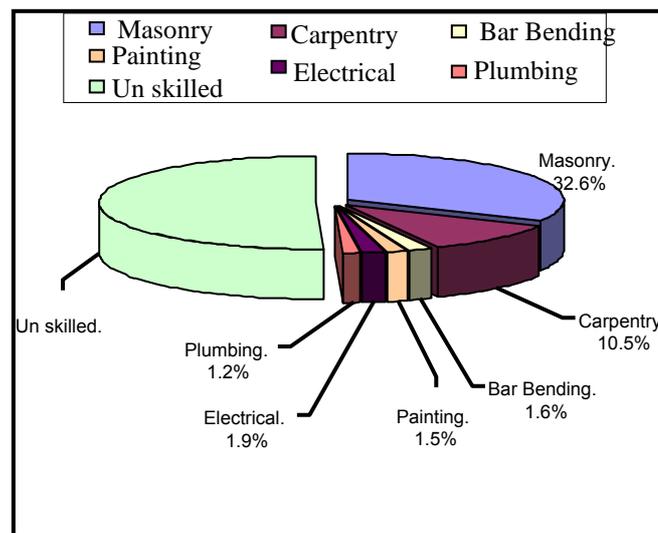


Figure 1- Occupational Structure of Sri Lankan construction trades

Construction is a labour intensive industry that places heavy reliance upon the skills of its workforce [3]. Paucity of skilled workforce results poor quality, high wastage and long-term productivity decline in the industry [4]. According to Dainty et al. [5] insufficiency of skilled workforce in the industry can generate poor work quality and delays in completion times of the projects and it leads general contracting firms to restrict their ambitions for growth, despite the buoyant nature of the construction industry. Therefore it is evident that the recruitment of skilled construction workers emerged as one of the key concern of the contractors. Although skilled workforce offers several benefits there is no standard method for determining the skill level in construction at the recruitment. Agapiou et al. [3] highlighted the contractor’s

recruitment criteria vary from one to another and it depends on local labour supply factor in construction.

1.2 Training of Workers

Since, training provides an indication of the skill level of the workforce [6] some employers tend to consider qualification acquired from undergoing formal training course as the basis of recruitment of workers. Therefore training is vital important for any sort of employment. In literature, it is defined “employee training” in a variety of ways. Amongst these, following Wickramasinghe [7] is one of the most commonly cited definitions related to human resource management. According to them, “Training is a process of updating the knowledge, developing skills, bringing about attitudinal and behavioural changes and improving the ability of the trainee to perform his or her tasks efficiently and effectively.” It demonstrates that training can enhance the worker’s skills and ability for the better performance of the career. In addition training can change attitudes and behaviour of the trainee. Therefore it is evident that, “Employee Training” has been and is being widely used to denote updating of skills, knowledge, attitudes or behavioural patterns of the employee. It means changing what employees know, how they work, their attitudes towards their work or their interaction with the co-workers or supervisor. To the extent that the construction industry is concerned the above scenario can be similarly applied for workforce in contracting organisations. In recent years there are number of training institutes have been established for skilled workers in Sri Lanka which provide training of varying quality at different levels and awarding standard qualifications certificates such as National Trade Test (NTT) equivalent to National Vocational Qualification system (NVQ) in United Kingdom.

1.3 Recruitment of workforce

Vacancies in organisations generally come up because of the departure of existing workforce which is called as labour turnover. Additionally it may arise because of a new position has been created. In such occasions organisation has to make a strategic decision regarding how it will build its workforce. Accordingly effective recruitment is essential for the successful functioning of an organisation. Recruitment is a process to discover the sources of man power to meet the requirements of the staffing schedule and to employ effective measures for attracting that manpower in adequate numbers to facilitate effective selection of an efficient workforce” [8]. Successful recruitment depends upon finding people with the necessary skills, expertise and qualifications to deliver organisational objectives and the ability to make a positive contribution to the values and aims of the organisation. This scenario can be similarly applicable for recruitment of skilled workforce for contracting firms too. According to literature there are criterions such as experience, work history, formal qualifications, attitude, task flexibility which are normally adopted by the employers at the recruitment of skilled workforce in construction industry.

Dainty et al. [5] stated that in United Kingdom most of construction organisations recruit workers who had not completed their qualifications. Few firms recruit workers who had

progressed on to advanced apprenticeships and higher-level National Vocational Qualifications. They further revealed that, contractors think modern apprenticeships and the qualifications systems underpinned them did not produce the quality of skilled worker's experienced. According to Gunawardena and Jayawardena [4] most of the contractors and clients in Sri Lanka do not demand workers have trade test qualifications or National Vocational Qualifications for employment. As well as, most of skilled workers do not possess formal qualifications and having gained their skills experientially. CCI Bulletin stated that the majority of Sri Lankan contractors adopt their own criteria for the recruitment of the skilled workforce such as year of experience. It was further stated that the contractors who follows careful conceived recruitment practice are in difficult stage to consider which certificate to accept and which one is complying with industry requirements. Therefore by looking at above, it is evident that the skills gained through undergoing training programs is not the major concern when determining the skill level of the workers in both foreign and Sri Lankan context. If the skills gained from the training programs are not treated on its merits by the contractors then the huge amount of money and time which spends on these will be wasted. This put the workers to an ambiguous state as they do not have a proper idea on what is more important to carter the demand in construction labour market [9].

Even though various researches have been carried out on training, only a limited number of these have focused on construction. Out of those limited number of researches, only a few have been conducted in the Sri Lankan context. But none of these have addressed the issue of "How the skilled labour production is catered for the acceptance." Thus, this research intended to fill the research gap by studying skilled workforce production and acceptance in the Sri Lankan construction industry.

2. Method of Study

Desk study was carried out to collect secondary data regarding training programs existing for construction workers in Sri Lanka. Survey approach was adopted for the primary data collection. Sample of contractors was selected based on probability stratified sampling technique. Questionnaires were presented among 77 recruitment officers (Project Managers or Site Engineers and Human Resource managers) and 34 Sub contractors in six distinct trades (Masonry, Carpentry, Bar Bending, Painting, Electrical and Plumbing). Descriptive statistical methods were used for the analysis of data collected from questionnaires. To find out the most typical values for the group of data obtained by questionnaire survey, statistics called minimum, first quartile, median or second quartile, and third quartile or maximum were used.

3. Research Findings

3.1 Skilled workforce Production

In Sri Lanka the training of construction industry craftsmen is mainly carried out by a series of training institutions, which belongs to public and private sector [10]. The public sector training institutions are the Vocational Training Authority (VTA), National Apprentice and Industrial

Training Authority (NAITA), Department of Technical Education and Training (DTET), Institute of Construction Training and Development (ICTAD). In addition, there are few private sectors training institutions as Chamber of Construction Industry Sri Lanka (CCI), Jayalath construction and so on. They have larger number of trainers who involved in specific training. Those institutions have their own curricula which were prepared for six to eighteen months training courses. Following table illustrates the training programs which are conducted by key training institutes in Sri Lanka at present for different trade workers.

Table 1- Training programs for construction workers in different trades

Key Training institutes	Courses Conducted					
	Masonry	Carpentry	Bar Bending	Painting	Electrical	Plumbing
ICTAD	√		√	√	√	√
NAITA	√	√		√	√	√
DTET	√	√		√	√	√
VTA	√	√	√	√	√	√
CCI	√	√				

In addition it was revealed that there are two schemes of establishing skill levels of construction workers by training institutes in Sri Lanka.

National Trade Test (NTT)

This is a program to trade test and issue “certificate of proficiency” to those who possess relevant skills. Informally trained practicing craftsmen mostly use this scheme to obtain a recognised certificate for upliftment of their local and foreign employment opportunities. At present there are three levels of certificates namely grade III, grade II and grade I which means semi - skilled, skilled and highly skilled levels respectively. In Sri Lanka, NTT is carrying out by National Apprentice and Industrial Training Authority (NAITA).

National Vocational Qualifications System (NVQ)

National Vocational Qualifications are designed to measure the competency of different vocational skills. The intention of having NVQ is to produce Sri Lankan workforce globally

competitive, through a standardised technical and vocational education system. The main objectives of setting up of NVQ are to recognise vocational skills locally and internationally, match and cater vocational training or skills with market demand, recognise the certificates those possessed through the NVQ system and to create an internationally competitive workforce in Sri Lanka.

The National Vocational Qualification Framework of Sri Lanka (NVQSL) has been established to support the efforts of fulfilling above objectives of NVQ.

National Vocational Qualifications Frame Work of Sri Lanka (NVQSL)

National Vocational Qualification (NVQ) framework makes provision for a nationally consistent skills development relevant to economic and social development and is of an international standard. The National Vocational Qualifications (NVQ) of Sri Lanka is based on national skills standard identified by the industry stakeholders. The skill standards include relevant core and generic skills. Recognition of skills of Sri Lankan is important to fulfil the requirements of National policy for Human Resources Development. The Skill Development Project (SDP) has initiated with the Government (TVEC) to resolve problems of mismatching training programs with current market demand, duplication of training provided by institutions and non-availability of a unified standards.

The NVQSL is therefore supporting the sustainable and strategic solutions to national training needs. As such NVQSL is now able to achieve international recognition for qualifications of skills those set up by the system and certificates offered by the institutes. Competency Based Training (CBT) curricula and appropriate training, learning and assessment materials are included in the framework. The system awards qualifications at seven levels as given below. The each level describes the process, learning demand and the responsibility applicable to each level of performance.

Table 2 - National Vocational Qualifications Levels

Level No.	Qualification	Description
Level 1	National certificate	This level 1 recognises the acquisitions of a core or entry level skills.
Level 2 Level 3 Level 4	National certificate	These level 2, 3, 4 recognise increasing levels of competencies. Level 4 qualification provides for full national craftsmanship.
Level 5 Level 6	Diploma	These level 5 and 6 recognise the increasing levels of competencies ranging from technician level to management level.
Level 7	Bachelors degree or equivalent	This level includes planning, making resources, management processes.

3.2 Skilled workforce Acceptance

Contractors' Awareness on Training Institutes in Sri Lanka

Results of the questionnaire survey revealed that the majority of medium size (M4 and M5) contractors' Site Engineers/ PMs have substantial awareness regarding training institutes rather than large size (M1, M2 and M3) contractors'. Thus it is obvious medium contractors recruit more workers with formal training qualifications on project basis rather than large contractors. It was revealed that most of large size contractors tend to sub contract the almost all of their work rather by adopting their own labours. As a result, Site Engineers or PMs who are recruiting workers on project basis may not be bothered about recruitment of skilled workers and they may not have much of awareness regarding training institutes. Since medium size contractors have a higher tendency to perform in the industry by means of their own labours especially on project basis, they were vigilant about recruitment of workers. As a result the largest part of Site Engineers/ PMs of medium size contractors have considerable awareness on training institutes for construction skill trades in Sri Lanka. When evaluating HR managers' awareness large size contractors were advanced to medium size contractors. Hence, it is clear that large contractors much consider about permanent workforce than medium contractors do. However, comparatively HR managers have superior awareness rather than Site Engineers/ PMs in both medium and contracting firms. It explicates HR managers who recruit permanent workforce give much concern about awareness about training institutes with the intention of recruiting high quality workforce with formal qualifications than Site Engineers/ PMs who are recruiting project basis temporary workers. In the case of subcontractors, it was revealed that electrical and plumbing trade subcontractors held supreme awareness on training places while bar bending and painting subcontractors were having a lesser amount of awareness about training institutes. Carpentry and masonry sub contractors have had considerable awareness regarding all five key training institutes in Sri Lanka.

Contractors' Correct Awareness on Key Training Institutes

Eventhough contractors have awareness on training institutes, it is imperative to test out whether their awareness is correct or not. It was determined through testing the marked courses for particular trades by contractors are really conducted in those training institutes. Large size contractors' correct and incorrect awareness was compared with the medium size contractors'. Sub contractors awareness was compared trade wise. Accordingly even though the majority of medium size contractors' Site Engineers/ PMs have substantial awareness regarding training institutes rather than large size contractors, large size contractors have correct awareness than medium size contractors. Results of the survey demonstrated that HR managers who are working in both large and medium size contracting firms have equal correct awareness regarding training institutes. Taking into consideration sub contractors situation it is evident that exclusive of bar bending and painting sub contractors all of remaining sub contractors were well known about training organisations.

Popularity of Training Institutes for Different Trades

According to responses, it was identified NAITA as the most popular institutes among recruitment officers for trades like carpentry, electrical and plumbing while ICTAD and DTET were popular institutes for masonry, bar bending and painting respectively. Although some contractors recognised VTA and CCI as training institutes for skilled trades in construction industry, they were not well popular among all.

Results of questionnaires presented for sub contractors revealed that NAITA was the most popular training institute for masonry trade among masonry sub contractors while ICTAD, NAITA, DTET, VTA and CCI were popular equally among carpentry sub contractors. VTA was identified by most of bar bending subcontractors as a training institute for their trade. Although there was no most popular training institute identified for painting trade ICTAD, DTET and VTA were evenly identified by painting sub contractors. In electrical trade, some other training institute/s was well liked among particular sub contractors. However ICTAD, NAITA and DTET were similarly popular among electrical sub contractors. In the case of plumbing trade, most of plumbers were familiar with some other institute/s and they have had similar awareness about ICTAD, NAITA, DTET and VTA.

Level of Consideration of Skilled Worker's Formal Training Qualifications at the Recruitment Stage

By doing the research it was able to assess to what extent contractors consider training qualification as a critic at the recruitment stage of a construction worker. The results were categorised trade wise such as masonry, carpentry, bar bending, painting, electrical and plumbing for the easy of comparison.

Most of the recruitment officers of medium and large size contractors and sub contractors suggested that they sometimes consider training qualifications at the recruitment of masons. It implies they do not give much weightage for training at the recruitment. As the reasons for that, the majority of recruitment officers revealed that for masonry trade formal training is not much essential and there is a deficiency of trained fresh workers for masonry trade due to it is a hard working and less reputable trade within the society.

Considering the circumstances of three types of recruitment officers, it is evident that exclusive of carpentry sub contractors, the majority of Site Engineers/ PMs and HR managers of both medium and large size contractors sometime consider training qualifications at the recruitment of carpenter.

It was apparent that according to recruitment officers' judgment, during bar benders' recruitment they give less weightage toward formal training qualifications and rarely consider for not only permanent workers but also project basis workers as well. As the reason for that, they said although appropriate training is important for bar benders' employment due to the nature of works, there is a lack of qualified bar benders. They further revealed that bar benders

should have ability to interpret drawings and undergoing a formal training course is necessary for that.

In the case of painting trade, the largest part of recruitment officers of large and medium contractors and sub contractors give slight weightage for formal training requirements during both permanent and project basis painting workers selection. Majority of recruitment officers declared that painting is a trade, which is not needed as much of awareness and formal training for the workers and it is sufficient to have experience to carry out the task successfully.

Electrical trade results demonstrated that most of HR managers of large size contractors consider always formal training for permanent electricians than Site Engineers/ PMs while contrary situation exists in medium size contracting firms. Taking into consideration the overall circumstances it can be concluded that most of recruitment officers state training is crucial for trade like an electrical. Because workers have to deal with technical works and necessary technical awareness should acquire through undergoing a formal training courses rather trial and error.

According to the recruitment officers' of large and medium size contractors' viewpoint, they often consider training requirements for plumbing trade while subcontractors consider sometimes. Their opinion was formal training is needed for plumbing trade because skills required to perform tasks in the trade cannot obtain through trial and error.

4. Conclusions

The prime aim of this research was to find “how the skilled labour production is catered for the acceptance in Sri Lankan construction industry.”

The desk study revealed that, there are number of training programs available for the construction workers in Sri Lanka, which were structured in various trades. Some organisations have widened their spectrum up to island wide training programs which focused both rural and urban youth; while others are limited only for urban trainees. Furthermore it was discovered that all selected five key organisations of ICTAD, NAITA, DTET, VTA and CCI are not providing training programs for every trades. The study unearthed two schemes of establishing skill levels of construction skilled workforce namely, NTT and NVQ. NTT can be identified as a program set to trade test and issue “certificate of proficiency” at three levels to those who possess relevant skills. Informally trained practising craftsmen mostly use this scheme to obtain a recognised certificate. National Vocational Qualifications systems are designed to measure the competency of different vocational skills with the intention of producing globally competitive workforce in order to suit industry specific, through a standardised technical and vocational education system.

The data analysis revealed that Site Engineers from medium size contractor organisations were more knowledgeable regarding training institutes than the large size contractors. However, it was found that HR managers in large contracting firms possessed higher awareness regarding

training institutes than those who were in medium size contracting firms. The empirical findings further disclosed that HR managers have ascendancy over Site Engineers/ PMs in terms of awareness regarding training institutions both in medium and large contracting firms. In the case of sub contractors, electrical and plumbing trade contractors held the upper hand in terms of awareness on training institutes whereas, bar bending and painting sub contractors were having a lesser amount of awareness about training institutes. With respect to the correct awareness, it was disclosed that Site Engineers of large contracting firms have correct awareness regarding training organisations while HR managers' correct awareness was alike in both large and medium contracting firms. Nevertheless, Site Engineers possessed highest correct awareness than HR managers of above two types of contracting firms. Considering sub contractors' correct awareness, the study found that masonry, carpentry, plumbing and electrical sub contractors have 100 percent correct awareness regarding training institutes for construction skilled workers in Sri Lanka while bar bending and painting counterparts have not so. NAITA was found out as the most popular training organisation among carpentry, electrical and plumbing trades. Results Masonry and bar bending sub contractors' revealed that ICTAD is the most popular training institute among them and DTET was most popular amongst painting sub contractors. The study further discovered that the recruitment officers often consider formal training qualifications for electrical and plumbing trades while some times they think about it for masonry and carpentry trades. The empirical findings further disclosed that the recruitment officers rarely gave consideration for formal training qualifications when recruiting workers the trades such as painting and bar bending.

Therefore, it can be concluded that most of Sri Lankan contractors and sub contractors are aware of available training institutes and courses for construction skilled trades. Another important finding of this study is, although contractors were asked to list down formal qualification of skilled workers which they recognised at the recruitment, even no body have come up at least with one training qualification. Therefore, it is obvious that contractors are familiar with training courses rather than training qualifications. According to literature, the general presumption was contractors' acceptance of formal training courses is not in a significant level. However, this study revealed that contractors consider training qualifications at the recruitment stage as significant basis for trades like electrical and plumbing. The higher intensity for technical knowledge for the trades such as plumbing and electrical were identified the as the reason behind this regard. However, the results proved that, contractors did not give much attention for trades like masonry and carpentry; since, these trades are still enclosed within its traditional boundaries and has undergone a lesser improvements in terms of technology. Therefore, the workers were still capable of earning skills through trial and error.

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