

Research on skill formation, enhancement and refinement of informal sector workers

- A case of masons and tile layers

**Consultancy assignment undertaken by
Swami Vivekananda Youth Movement**



On behalf of CHF International



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Foreword

India's Gross Domestic Product (GDP) has been growing at an average of 6.8% for the last 10 years. Many have hailed the 2000-2010 decade as a golden decade for India due to India's nominal GDP nearly trebling from \$ 0.5 trn USD to \$ 1.3 trn USD. While this has been a tremendous achievement following the liberalization of Indian economy in 1991, this has not resulted in a corresponding increase in the employment in formal labour markets. As noted in the report "The Challenge of Employment in India: An Informal Economy Perspective" by the National Commission for Enterprises in the Unorganized Sector, "Total employment in the economy has increased from 396 million in 1999-2000 to 456 million in 2004-05. Since there is not much change in the organized or formal employment during this period, the increase in total employment has been almost an informal kind. Although employment increased by 14 percent in the organized sector over this period, the entire increase has been mostly informal in nature, i.e., without any job or social security. This constituted what can be termed as informalisation of the formal sector". While India is aspiring for Inclusive Growth, this undesirable trend of informalisation has been continuing and has not shown any let up.

The continued migration of the rural unskilled workforce towards urban cities resulting in majority of them getting absorbed in informal work will only increase the existing Urban Poverty in India. The lack of skills when joining the workforce and also inability to acquire skills for the migrant worker once he is part of the working pool are major roadblocks towards formalizing of the labour pools. We at CHF International are keen on looking at ways and means to ameliorate the working conditions of the informal sector workers and are keen to enable interventions towards formalization of the Informal Indian workforce.

With the construction industry being the second largest employer in the Indian economy, we are glad to investigate at 2 interesting sub sectors of the construction industry the masons and tile layers. This study focuses on the Skill formation, Enhancement and Refinement of the Informal Sector Workers of masons and tile layers.

With our vision to be a catalyst for long lasting positive change in we feel this study will also enable various organizations working on skill formation for the informal workers, formalization of labour markets, poverty alleviation and inclusive growth will find it useful to incorporate the learnings into their own programmes.

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Executive Summary

The study “A research on skill formation, enhancement and refinement of the informal sector” was taken up by Swami Vivekananda Youth Movement (SVYM) on behalf of Cooperative Housing Foundation (CHF) International as a consultancy assignment. The research aims at analysing the skills of Masonry and tile laying workers in the construction industry. The Study tries to give an overview of the construction industry in India, the structure, major players and human resource requirement of the industry. The information regarding socio- economic profile of the workers in the study universe, skills that they possess and the skill growth are documented.

The study looks at the skill building process that happens to the entry level masons and tile layers in order to become seasoned masons and tile layers respectively. On the basis of the evidences from the field, the study recommends a training design for skill development of the entry level workers so that there is a quick and easy transition to a senior position.

Process of the research

The present study is both qualitative and quantitative in nature. The duration of the study was for two months that is between 25th November 2010 and January 20th 2011. Initial Interactions with civil engineers, contractors and experienced masons helped to obtain information in order to device a structured interview schedule for interviewing senior masons and tile layers and entry level masons and tile layers. The schedules were field tested at different construction sites in Mysore and later were fine tuned based on the testing feed backs, for interviewing senior masons and tile layers and entry level workers both in Mysore and Bangalore. The data collected has been analysed using the statistical tools such as frequency tables and cross tabs in SPSS sheets and based on the analysis the following issues have been inferred. The findings are based on the responses of self assessment by the workers.

Findings

Skills of Masons and Tile layers

The masons and tile layers over a period of time acquire knowledge about different skills required for their respective positions. Their interest and opportunities will help them develop mastery over a few of these skills.

The following are the set of skills identified to be possessed by the masons and tile layers.

Skills of Masons

- Marking
- Levelling and plumbing
- Concreting
- Plastering
- PCC
- Brick laying
- Shuttering
- Centering

Skills of Tile layers

- Mortar mixing
- Tile Polishing & cutting
- Buffing
- Tube levelling
- Mortar levelling
- Tile laying & fitting
- Joint filling,
- Skirting
- Tile laying with different types of tiles.

Process of skill formation

Fresh entrant into the industry is always the untrained labour, the skills are picked on-job by assisting the seniors in the trade. The tricks of the trade are passed on in an informal mode. Senior masons will have a gang of six to ten helpers and this provides opportunity for the new entrant to learn both from the master and the peers. These new entrants are commonly called by the name 'helpers'. Henceforth in this report, helpers are addressed as entry level workers as many despite the years of experience continue to work as helpers.

A new entrant to the masonry work will be expected to run chores like Mortar mixing, scaffolding, shifting stones, blocks, mortar or any other building material from one place to another. Gradually the new entrants absorb the skills through observation of the work done by the senior mason. The senior masons constantly evaluate the quality and capability of the helper and keeps grading them, and based on the assessment gradual additional works will be given on trial basis. If the helper is good at work, he will be

guided and entrusted with more tasks. By doing this, the senior mason facilitates the learning process of the worker. It is found that the helper learns the tasks of masonry such as Marking, Levelling, Plumbing, Foundation Laying, Concreting, Plastering, Centering and Shuttering within a period of 3-5 years provided there happens a steady upward learning process. This can be followed by a promotion in the position of the helper as a half mason or allowing him to form a masonry gang with a number of helpers. But his ability and skills to manage, lead, and guide people under him and get things done are important requisites to become a senior mason. As he keeps working, over the years he identifies and chooses a skill such as Marking, Shuttering or plastering as his area of expertise and happens to be known according to his chosen area of expertise.

In the case of tile laying, the entry level workers learn the skills within a shorter period of time when compared to the learning period of a helper from the masonry sector. The tasks of a helper/entry level worker in tile laying are found to be shifting, cleaning and mortar mixing. The learning happens through observation, experimentation and the guidance of the senior tile layer.

The analysis of the data shows that there are senior masons who learnt the skills in a shorter period of time of 1-5 years and earned equally or better than his counterparts who has an experience of 11-16 years of work experience. It indicates that possession of large number of years of experience without a corresponding increase in skills doesn't help the workers to earn better or a higher position. A senior worker should possess the technical skills which have to be demonstrated in producing quality work along with the soft skills such as leadership. The reason behind why a number of people remained at the position of helpers or entry level masons despite their large number of years of experience may be attributed to these factors.

It is found that the skill possession rather than the number of years of experience earns better pay to the workers. From the interview with the engineers and the workers it was found out that in addition to the possession of skills, the quality of work done and efficiency are also deciding factors for a good pay in the industry. Therefore, Irrespective of the number of years of experience, a worker can earn a good wage based on the skills he possess and the quality of work done.

Hence, a training program on technological skill up gradation for the construction workers could also include training on leadership and soft skills.

- Training interventions: None of the interviewed masons or tile layers has come across a skill building training program either before joining the work or during.
- Method of learning the skills: All the respondents learnt the skills hands on as part of their job. They acquired the skills through the following ways.
 - Observation – By observing the work done by the co-worker or the senior mason

- Trial and error – Experimentation of the work, correcting and learning from the mistakes
- Guidance from the senior worker, co-worker or engineer
- Trainer: In majority of the cases the trainer is found to be the head mason, with some exceptions of co-worker and the contractor considered as trainer.
- Scope for skill up gradation training program: The respondents were found to be enthusiastic about undergoing skill building training program but not at the cost of leaving their job.
- Training duration: The duration of the training program cannot be determined based on the responses of the masons and tile layers as they could not recall the exact time period they took to learn the skills of their respective trades. The findings about the duration of learning a skill more or less gives an idea of how long the learning of that particular skill spreads through their career in the industry.
- Majority of the workers expressed their inability to pay for the training program. Even though a range for fees was suggested, it does not sound promising as there were also suggestions for being provided with a stipend while they are in the training period.
- The senior management of the construction industries interviewed expressed hope about such skill training programs considering the fact that the construction industry is facing acute shortage of skilled people for trades such as masonry and tile laying, though they were not keen on taking the financial burden of such training programs.
- Though mechanization at the construction sites reduces the human labour, the need for skilled people in trades are increasing and the demand for such labour far exceeds the supply.
- To increase the productivity of the construction industry it is utmost important that qualitative work is performed at all levels of the workforce in the industry and as above 80% of the workforce is constituted by the untrained workers the training of these workers will enhance the productivity levels.

Suggestions/Recommendations

Based on the findings of the study it is advisable to look for ways that can make skill building programs more effective and successful. It is not only the possession of large number of years of experience and technical skills that help the workers in earning a better position or wages in the construction industry, but also the empowerment of oneself.

It is found that economic mobility of these workers considerably increases when there is a corresponding increase in their self esteem rather than mere possession of technical skills. Training programs incorporating technical skills with soft skills should be seen as the beginning point. Entrepreneurship begins only when a person moves from the Socialized mindset to that of a self- authoring one. This will necessitate the training programs include soft skills (Communication, persuasion, Negotiation) along with that which helps build the self esteem of the trainee. Discussions with the study participants revealed that it is the ability of better self – authorization of a worker that made the difference in terms of better wage or position compared to others who didn't possess it.

Following are the recommendations for such training programs,

- Incorporation of soft skills training into the training curriculum.
- The training programs have to be of short durations and should focus more on practice and less of theoretical concepts. There is no need for classroom sessions demanding functional literacy as it doesn't fit into the learning process of the workers as they belong to the category of illiterates or literates with minimum education.
- The common learning methods among these workers were observation, trial and error and guidance from the senior worker. Hence Observation, learning processes and the guidance from the trainer can be the methods of learning for the workers.
- In the case of training program on masonry the duration could be of 6 months as the senior masons have opined that all the skills of masonry can be mastered within a period of 1-2 years.
- For the tile layers it takes a period of 6months to 12 months to learn all the skills of tile laying and as the training programs are going to be for a continuous period of time, a tile laying training program can be structured for a period of 3 months
- The training programs should come up with certain attractive packages so that the workers will be motivated enough to join the training program. There was a

suggestion from the respondents that they would be ready to come for the training program if they are provided the equivalent of lost wages as a stipend.

- A training institute with the infrastructure and facilities to teach these skills has to be established preferably at the source of procuring the labour. As there are quite a few existing training institutes, strategies for strengthening these institutes by getting candidates and necessary resources and working with them can be an alternative for establishing a training institute.
- It would be meaningful if the duration of the training program is decided based on a study of the experiences of existing training institutes. Studying their course curriculum will also be helpful in refining or coming out with a better one.
- Getting the entry level workers as candidates for the training program can be done by creating linkages with the contractors who bring workers from the other states of India.
- Certification and testing of the skills have to be done for the workers as all the respondents valued the idea of getting certification.
- As far as the existing workers are concerned it is difficult for them to leave the job for skill training. As the work timing of these workers are demanding and as physical work is involved, one needs to consider training schedules of short durations over long periods of time co-existing within a reasonable workers daily schedule.
- Keeping the demand for skilled manpower in different construction trades such as masonry and tile laying, unemployed youth of rural and urban areas can be recruited for training ensuring their placement with good wages. Networking with NGOs which work for livelihoods for youth would be useful in procuring interested candidates for the training program.
- The amount of effort the construction workers put in is nowhere matching to the wages they earn, hence time to time increase in the wages and protection of labour rights should be demanded so that dignity of labour is in place. A higher wage and better amenities will certainly help in making the job opportunities in construction industries as a career path for people to choose rather than considering it as an option for poor, unemployed and marginalized people.
- In order to prevent the problem of migration as it happens with the construction workers, efforts have to be made to give training, certification and placement to the candidates in their respective states.
- The complexity of the construction sector, lack of clear employment contracts, contracting and sub-contracting norms and lack of employee loyalty serve to dis-

incentivize any in-house training programs that construction companies can conceive of.

I.INTRODUCTION

The Research “A study on Skill Formation, Enhancement and refinement of the informal sector worker” was conducted to understand the challenges faced by the construction workers (Masons and Tile layers) and the relevant interventions that can be made towards improving their livelihoods. The research studied the process of skill formation among the workers in the construction industry particularly from the subsectors of Masonry and Tile laying. The research also studied the construction industry in India, the importance of the sector, major players and the labour requirement of the industry in the coming years. The skill assessment of the masons and tile layers was done during the study.

1.1 Construction Industry in India

In India, Construction Industry is the second largest employer of human resource, after the agricultural sector providing employment to 33 million people. ¹It provides employment to 14% of employable citizens of the country and also forms an important part of Indian economy contributing about 12% of the GDP. The present asset creation potential of the industry is estimated at Rs.310, 000 Crores contributing its share of 12% to the GDP. The increasing need for the housing and nationwide infrastructure development assures the quantum growth of the industry in coming years. The construction sector is set to grow at a rate of 15 per cent as a result of the ongoing industrialization, urbanization and growing need for better infrastructure nationwide. The construction industry has strong linkages with other industries such as Cement, steel, tiles and other materials of the kind. The industry majorly encompasses the sectors of real estate, infrastructure and industrial construction and the activities that exclusively take place in these three sectors constitute the activities in the sphere of construction industry.

¹ Report of the Working group on Construction for the 11th Five year plan, Planning Commission of India;PP:22

1.2 ²Structure of the Construction Industry

- Real Estate: Construction of Housing, Industrial, commercial and corporate infrastructure which includes the houses, hospitals, hotels, apartments, offices, schools, townships etc.
- Infrastructure: Construction of rural and urban infrastructure such as highways, roads, ports, Airports, power systems, telecommunication systems etc.
- Industrial: Construction of Oil and Gas refineries, pipelines, textiles etc.

1.3 People Involved and Major players

The Indian construction Industry comprises about 200 firms in the corporate sector. There are about 1,20,000 class-A contractors registered with various government construction bodies and thousands of small contractors. (Source: NSDC)

The major players in the Indian construction industry are

- L&T, which takes up large scale infrastructure projects and has more than 12,000 strong skilled workforce L&T has an annual turnover of 25,000 Crores.
- DLF: DLF is mainly into the construction of housing, retail and township projects in the major cities of India.
- Shobha developers Ltd: is into the construction of commercial and office space for the major IT companies in different Indian cities.
- Other major players in the construction industry include Unitech, Jaypee, and GMR Infrastructure etc. These companies take up large infrastructure projects.
- There are also medium sized enterprises such as Builders such as Purvankara, Brigade, Sankalp groups etc.

(Source: Business maps of India website, NSDC report on skill gap analysis report for building, construction and real estate industry)

1.4 Construction Industry in Bangalore

Construction Industry in the IT hub of the country faced a boom after the launch of national and multinational IT and non-IT companies in the city. Followed this there was migration of people from every part of the country to Bangalore, looking for better

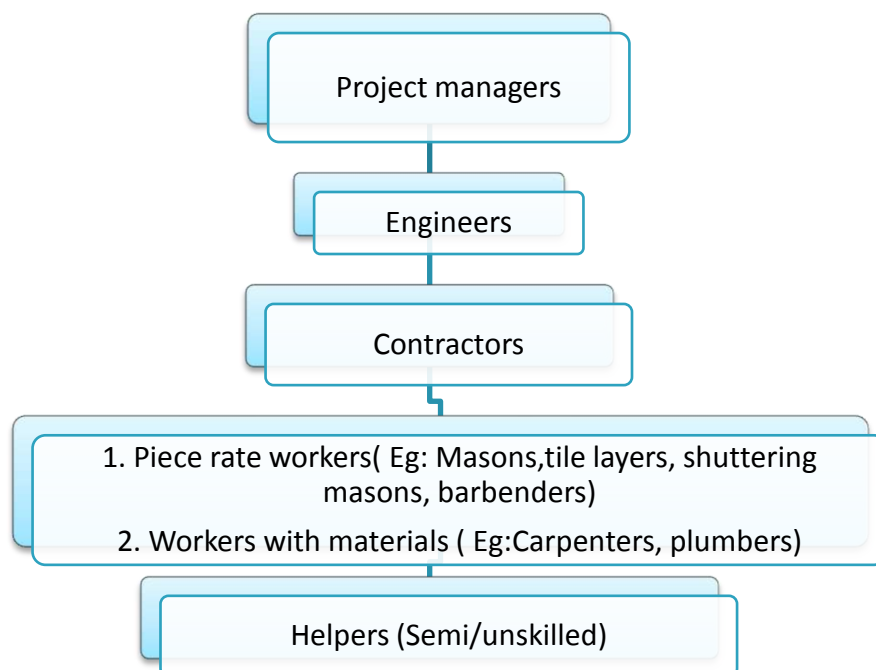
² Report on human resource and skill requirements in building, construction and real estate sector

livelihood options and for people with very less or no education the construction industry proved to be an easy employment provider.

1.5 General Human resource structure

The general human resource structure of construction industry is as follows,

Figure 1: General human resource structures of the construction industry



(Adapted from the Report on human resource and skill requirements in building, construction and real estate sectors)

1.6 ³Employment rate of the organized and unorganized workers in the construction industry

Table 1.1: Number of people employed in the construction industry

	Occupation	Numbers (in1000s) in 2005	Percentage
Organized workers	Engineers	822	2.65
	Technicians & foreman etc.	573	1.85
	Clerical	738	2.38
Unorganized workers	Skilled workers	3267	10.57
	Unskilled workers	25600	82.45
	Total	31000	100.00

(Adapted from the Report by the Working group on construction, Planning Commission of India)

³ Report by the Working group on Construction for the 11th Five year plan, Planning Commission of India;PP:19

1.7 Profile of Informal workers-Masons and Tile layers

Masonry and tile laying are two important sub-segments of the construction industry and they belong to the informal workforce of the construction industry. Earlier these two were learnt by the workers as the traditional family occupation and there were highly skilled masons and tile layers available for construction. But in recent times this practice has been coming to an end wherein the next generation of the family opt for other occupations or gets into employment in the formal sector. The construction industry now has, skilled workers in these subsectors who entered the industry as helpers and mastered the skills of either masonry or tile laying over the years.

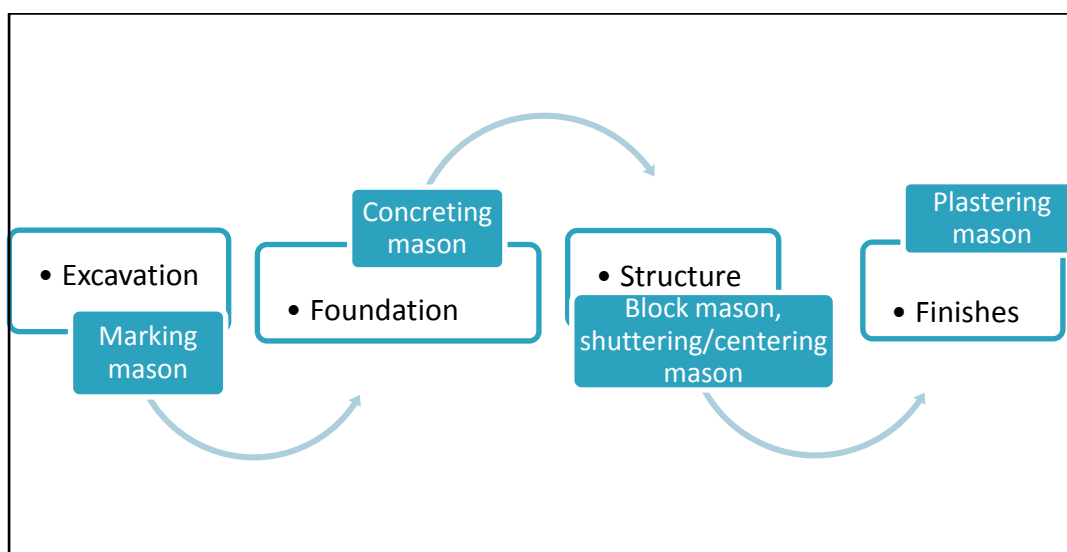
1.8 Skills of masons and tile layers

The masons and tile layers develop certain sets of skills required for their work during the time they are in the position of helpers. They learn these skills through observation, from co-workers, and through guidance from the senior masons/tile layers or engineers.

1.81 Masons

Masons are the workers who are involved in the construction of a building almost throughout the processes involved. Their work comes at different stages of construction. Masons are required right from the beginning of the construction.

Figure 2: Major Processes in building construction and role of masons



At different levels of construction, masons of different skills can be employed. The skills of marking, concreting, block masonry, shuttering/centering and plastering are considered as specializations of the masonry trade. It is also possible that a senior mason possesses all these skills.

Table 2: Skills of Masons

Trade	Skills
Masonry	<ol style="list-style-type: none">1. Marking2. Levelling and plumbing3. Foundation laying4. Concreting5. Plastering6. Plain Cement Concreting7. Brick laying8. Shuttering9. Centering

1.82 Tile layers

The tile layers come into the picture at the finishing stage of the building. The tile laying can be of different types such as flooring-laying of tile on floor, cladding-tile laying on the wall, Dadoing- tile laying of bathrooms. An experienced tile layer can possess all these skills along with tiling of different types of tiles.

Table 3: Skills of Tile layers

Trade	Skills
Tile laying	<ol style="list-style-type: none">1. Cutting and polishing2. Buffing3. Tube levelling4. Tile checking5. Mortar levelling6. Tile laying – Flooring, Cladding, Dadoing7. Skirting8. Laying of different types of tiles

1.9 Need for training

The construction industry forms the second largest informal sector employer, second only to agriculture creating assets worth over Rs.310,000 Crores. The industry employs over 30 million people and around 14 per cent of the nation's working population depends on this sector for its livelihood. Though the sector is highly labour-intensive the major part of the workforce is made up of unskilled, migrant people from the rural and semi rural areas of the country. Due to the predominantly informal nature of the sector, the lack of proper organization and professionalism in a large part of the industry, there is little scope for the skill development of the work force. Despite its role as one of the largest informal sector employers in urban areas, there exist no formal system for training and assessment/skill certification for these workers. The entry level workers being unskilled and economically backward take a long period of time to reach the position of a senior worker and at times they end up remaining at the helper stage. Even though there is an increase in their wages over time, it does not help them to come out of the cycle of poverty and results in limited social and economic mobility.

On the other hand, the government of India proposes to achieve 9-10% GDP growth during the current five year plan period and adequate physical infrastructure is most essential to achieve growth of this rate. Hence the government proposes to create systems and measures to improve the productivity and capacity building of the industry as a response to meet the physical infrastructure requirement of the country. The acute shortage of workers who are skilled at different trades that the industry faces, and to be able to meet this manpower requirement is a challenge for the construction industry in delivering the expected results. According to the National Skill Development Corporation's survey on human resource and skill requirements in the building, construction industry and real estate service, the incremental workforce requirement for the next seven years is estimated to be four million people per year.

1.10 Training available for the construction workers

Across the nation there are training institutes which give training on the different trades of the construction sector. The ⁴Construction Industry Development Council is the apex organization set up by the Planning Commission of India, jointly with the Indian construction industry to take up activities for the development of the construction industry. The council through its training wing, Construction Industry Vocational Training Association (CIVTA) has set up vocational training centers in 19 states for which the respective state governments provided support in the form of physical infrastructure, ITIs and nomination of candidates under various state and central schemes such as NREGS, vocational training for candidates belonging to SC/ST categories etc. Forty seven trades of the construction industry are identified and enlisted for testing, training and certification which includes short term courses for Masonry and tile laying. The certification for the courses offered by CIDC is provided jointly by the Ministry of labour and the Assam Central University. The eligibility criteria for the courses are set as 10th Standard and above for the training in supervisory Cadre and below 10th standard for the training in artisan's category with a minimum age limit of 18 years. The course duration is 3 months which includes participant orientation, pedagogy and hands on training.

The ⁵National Academy of Construction (NAC) was established by the Government of Andhra Pradesh in 1998 with the vision of holistic development of the construction industry in India. The Construction Technician's Training Institute (CTTI) is unit of the NAC established for imparting qualitative training in trades of construction such as Masonry, Bar-bending, Plumbing, Carpentry, Welding etc. For the masonry trade the course duration is 3 months which comes with a fee of Rs. 9200. The eligibility for the candidates to do the course is 5th standard with an age limit of 18-35 years.

⁴ <http://www.cidc.in/cidcnew/activities8a.html#03>

⁵ <http://www.nac.edu.in/index.html>

1.11 Human power requirement for the construction industry

The planning commission of India estimates the manpower requirement of the industry over the next 6 years as follows.

Table 4: Human power requirement of the industry

Manpower	92 million man years
- Engineers	3.72 million man years
- Technicians	4.32 million man years
- Support Staff	3.65 million man years
- Skilled Workers	23.35 million man years
- Unskilled/ Semi skilled workers	56.96 million man years

(Adapted from report by the Working group on construction for the 11th five year plan, Planning Commission of India)

The topmost requirement is found to be in the unorganized sector for the unskilled/semi skilled workers. The subsectors of masonry and tile laying belong to the category of unorganized workforce in the construction industry.

These projections about the skilled human resources requirement for the construction industry clearly show that there is a good opportunity for new entrants if they are well equipped with the necessary skills.

At the same time there is concern about the consistent decline in the skill levels of skilled workers. The working group on construction for the 11th five year plan also proposes the certification and grading of workers at different levels and trades based on the proficiency they achieved.

The problem and the opportunity lying ahead of the construction workers emphasises the need for a formal training system with suitable contexts and settings to impart skills to these workers followed by the skill certification at various levels or according to the experience in work.

1.12 Complexity of the construction Industry

The construction industry has a highly complex structure and mode of operation because of the following processes involved.

- The construction industry has strong forward and backward linkages with other sectors such as cement, steel and other construction materials manufacturing industries.
- The workforce of the sector is unorganized to a large extent.
- Contracting and sub contracting is the norm in the sector. Though legal contracts are more evident in larger construction companies, they tend to be limited to the higher end of the value chain. Lower than, it is word of mouth dealings and relationships based on cash advances and personal equations.
- There is asymmetric information within the sector.
- Most workers at the lower levels are unclear about who their direct and indirect employers are. They are more conversant with the agents who recruit them and information pertaining to their employment is dependent on the labour contractor who hires them.
- Masons, tile layers and other semi-skilled and skilled professionals are constantly mobile and move from one employer to another or from one contract to another. Absence of employee loyalty is the norm.
- Though the sector is driven by technical skills, most of the workforce lacks other soft and managerial skill which is a limitation to their social and economic mobility.

1.13 CHF International and their interest in the study

⁶CHF International is an international development and humanitarian aid organization which was founded in the year of 1952 in the United States of America. CHF is an acronym for the Corporate Housing Foundation and started its activities with providing housing for low income families in rural and urban America. Later in the 1960s, their activities were expanded to areas of global health, economic development, housing and infrastructure, emergency response and to the countries around the world. CHF international works with the vision to be a catalyst for long lasting positive change in low and moderate income communities around the world helping them to improve their social, economic and environmental conditions.

In India, CHF international is working on upgrading slums through projects on housing, solid waste management, livelihood, and water and sanitation in slums of major cities.

⁶ http://en.wikipedia.org/wiki/CHF_International

1.14 SVYM – role and interest in the study

Swami Vivekananda Youth Movement (SVYM) is a development organization, engaged in building a new civil society in India through its grassroots to policy-level action in Health, Education and Community Development sectors. Acting as a key promoter-facilitator in the community's efforts towards self-reliance and empowerment, SVYM is developing local, innovative, and cost-effective solutions to sustain community-driven progress. SVYM is also rooted to its values of Satya (Truth), Ahimsa (Non-violence), Seva (Service) and Tyaga (Sacrifice), which are reflected in its program design and delivery, transactions with its stakeholders, resource utilization, disclosures, and openness to public scrutiny. Getting community support and participation, maintaining healthy governmental relations, harbouring private sector support, and sharing its experiences with like-minded organizations have been the hallmark achievements of SVYM's evolution over the past 26 years.

For over a decade, expertise and experience of SVYM is sought by many Government, Non-Government Organizations and corporate bodies working in Development sector through the TRAC wing of the organization which involves the activities of Training, Research, Advocacy and Consultancy.

1.14 Objectives of the study

- To understand the skill sets of the workforce from the subsectors of masonry and tile laying.
- To understand how the process of skill building happens to an entry level mason and a tile layer in order to become a seasoned mason and tile layer respectively.
- To formulate a training design for skill development of the entry level workers

II. METHODOLOGY

2.1. Sampling design

The target population in this research refers to the entrants and senior workers from the masonry and tile laying subsectors of the construction industry.

In the study the senior level and entry level workers of the two subsectors are categorized based on the skills they possess rather than the number of years of work. A senior worker is experienced with the possession of a number of masonry skills, in the case of a mason and tile laying skills in the case of tile layer and irrespective of the number of the years he has been working. The entry level workers are those who enter the industry as helpers and are largely unskilled. The senior worker guides a group of helpers/entry level workers during the construction.

In the study the following characteristics were used for identifying a senior worker and an entry level worker

1. The senior worker is the head of a group of entry level masons and possessed majority of the skills of his/her respective trade.
2. The entry level worker belonged to the group under a senior worker and he may or may not possess majority of skills of his/her respective trade.

The total numbers of respondents in the study were 35, wherein 25 were masons. Out of them 16 are senior masons and 9 are entry level masons. The total numbers of tile layers interviewed were 10. Among them 1 person was a contractor of tile laying, 5 were experienced tile layers and 4 were entry level tile layers.

2.2. Sampling method

The study universe was identified as 40. Purposive and random sampling methods were used. The preselected construction sites were visited for the data collection purpose. The available workers were picked randomly for interview.

2.3. Secondary Data Collection:

Reports by the planning commission of India and National Skill Development Corporation on construction Industry was sourced apart from undertaking internet research.

2.4. Primary Data Collection:

Primary data collection was mainly done through interview method. The respondents were interviewed personally to gather information about their social background, family information, work profile, the skill formation during the years and their earnings.

2.4.1 Interview method: The target population of the study, masons and tile layers were interviewed to collect information by using structured questionnaires.

2.4.2 Observation method: To understand the nature of work and skills of the masons and tile layers observation method was deployed.

2.4.3 Discussions: Discussions with the heads of construction companies were held to find out the scope of a skill building training program for the construction workers.

2.5 Tools for data collection

Structured questionnaire was used as a tool to collect data from the masons and tile layers. The data collected is both qualitative and quantitative in nature.

2.6 Data collection process

The project work was for the period of 25th November to 20th January. The study started from 22nd November collecting secondary information about the construction industry labourers and an overview of the industry in India. Informal discussions were held with the heads of large construction companies. A field study was done at different construction sites to understand the nature of work and the skill sets of the masons and tile layers. Interactions with civil engineers, contractors and experienced masons were held to obtain additional information in order to device a questionnaire for interviewing senior masons, entry level workers, senior tile layers and entry level tile layers. The questionnaire was field tested and later deployed at different construction sites for data collection by interviewing senior masons, senior tile layers and entry level workers.

Given below are the locations and construction sites chosen for the study.

Construction Company	Location	Type of workers interviewed
Gina Engineering PVT Ltd	Bhannerghatta Road, Bangalore	Masons(Both experienced and Helpers)
Techno art Constructions	Yelahanka Bangalore,	Tile layers (Both experienced and Helpers)
Sankalp Constructions and independent house construction sites	Mysore	-Experienced Masons, entry level masons -Experienced Tile layers and Entry level tile layers.

2.7 Data processing and analysis

Appropriate statistical tools are used for data processing and data analysis is done by looking at and summarizing data with the intent to extract useful information, compare the information, make inferences, and develop suggestions and recommendations. SPSS software is used for entering and processing the data. Frequency tables and charts were drawn for analysis of the data.

2.8 Scientific errors

- The different geographic area of the respondents may cause error while processing and comparing the information.

2.9 Limitations of the study

- Non-availability of the construction workers for interview during the work time

III. RESULTS AND FINDINGS

3.1 MASONS

3.1.1. SOCIAL PROFILE

1. AGE

Table 5 : Age o f the senior masons

Age Range (Yrs)	Frequency	Percent (%)
20-25	1	6.3
25-30	4	25.0
30-35	2	12.5
35-40	2	12.5
40-45	4	25.0
45-50	2	12.5
50-55	1	6.3
Total	16	100.0

As shown in the table, the age of senior masons varies from 20 years to 55 years. 9 of the 16 senior masons' age fall within 40 years. There are also masons whose age range from 50-55 years old who could be called as veterans of the masonry trade.

The senior masons usually enter the industry as helpers in the age group between 15-20 years as it can be observed from the table below. Therefore we can infer that there are masons who learnt the skills of the trade in a period as short as 5 years and bestowed with the title of senior masons.

Table 6: Age of Entry level masons

Age Range(In Yrs)	Frequency	Percent (%)
15-20	3	33.3
20-25	1	11.1
25-30	1	11.1
35-40	1	11.1
40-45	2	22.2
50-55	1	11.1
Total	9	100.0

Among the total respondents it is found that the helpers enter the work at the age range of 15-20 years as entry level workers.

2. Gender

The men workers primarily dominate the masonry trade. Even though there are women workers in the industry they work at the construction sites as helpers for the masons. Given societal notions that women cannot do hard work, they never graduate to mason's position. The reasons most often given are that women are weak, cannot climb the scaffolding. But on the work sites visited it was observed that they were carrying and shifting blocks and other building materials at the construction site. They were also on expected to mix the mortar whenever asked for, which is considered to be the work of an entry level mason.

In our sample there were no women identified as a senior mason, feedback from the key informants also indicated the same.

Table 7: Gender in senior mason's category

Gender	Frequency	Percent (%)
Male	16	100.0
Female	0	0.0
Total	16	100.0

Table 8 : Gender - entry level masons

Gender	Frequency	Percent (%)
Male	7	77.8
Female	2	22.2
Total	9	100.0

On the other hand there were two women were working as helpers.

3. Marital Status

About 84% of the masons were married. This was consistent with the age group of masons as most of them were in the marriageable age.

Table 9: Marital status of the masons

Marital status	Frequency	Percent (%)
Unmarried	4	16
Married	21	84
Total	25	100.0

4. Literacy level

Table 10: Literacy level of the senior masons

Education	Frequency	Percent (%)
Literate	10	62.5
Illiterate	3	18.8
Sign	2	12.5
Read	1	6.3
Total	16	100.0

Among the senior masons 10 were literates, 3 were illiterates. Two of them know how to sign and 1 knew how to read.

Table 11: Literacy among the entry level masons

Education	Frequency	Percent (%)
Literate	4	44.4
Illiterate	3	33.3
Sign	2	22.2
Total	9	100.0

Among the entry level masons 4 were literates and 3 illiterates. 2 of them knew how to sign.

5. Education levels

Of those respondents who were literate, 50% of the senior masons had attended school up to a secondary level. That is, between 8-10 Standard. Another 40 % of them were those who had attended 5th -7th Standard.

Table 12: School attended by the senior masons

School attended	Frequency	Percent (%)
1-4 Std	1	10.0
5-7Std	4	40.0
8-10 Std	5	50.0
Total	10	100.0

Table 13: School attended by the entry level masons

School attended	Frequency	Percent (%)
1-4 Std	2	50.0
5-7Std	1	25.0
8-10 Std	1	25.0
Total	4	100.0

Out of the four literates among entry level masons, 2 attended school till 1-4 std, 1 till 5-7 std and 1 till 8-10 std.

6. State of Origin

The masons in the construction industry in Bangalore mostly come from the northern states of India. However, the respondents of the survey included 24% of the workers from Bihar and 76% Karnataka.

Table 14: State of Origin: senior Masons

State of Origin	Frequency	Percent (%)
Karnataka	12	75.0
Bihar	4	25.0
Total	16	100.0

Table 15: State of origin: Entry level masons

State of Origin	Frequency	Percent (%)
Karnataka	7	77.8
Bihar	2	22.2
Total	16	100.0

7. Family Information

In the case of workers from the state of Bihar, their families stayed back at their native places.

The average number of earning members in the family was 2 and it was found that in most of the families women were not working making it an average of 1.

Table 16: Family information

1. Average number of family members	4
2. Average number of female adults	2
3. Average number of male children	2
4. Average number of female children	2
5. Average number of male members earning	2
6. Average number of female members earning	1

8. Family income

The family income of the respondents ranged from 5000-15000 with a smaller percentage of people falling under the income category of below Rs.5000 per month.

The average number of people earning in the families of these workers are 1.62 and all the family members work in the informal sector.

The Table shows that 68.8% of the Senior masons have a family income that ranges from 5,000- 10,000, whereas a 25% have an income between Rs.10,000 to 15,000.

Table 17: Family income of the senior masons

Family Income	Frequency	Percent (%)
<5000	1	6.3
5000-10000	11	68.8
10000-15000	4	25.0
Total	16	100.0

Table 18: Family income of the entry level masons

Family income (In Rs)	Frequency	Percent (%)
<5000	1	11.1
5000-10000	5	55.6
10000-15000	3	33.3
Total	9	100.0

In the case of Entry level masons, 55.6% have the family income between the range of Rs.5, 000-10,000 and a 33.33% has a family income between Rs.10, 000-15,000.

3.1.3 Work profile

1. Experience

12.5% of senior masons have experience between 26-30 years and another 12.5% had experience between 31-35 years. 6.25% of senior masons had experience as long as 41-45 years.

Table 19: experience level of the senior masons

Experience (In Yrs)	Frequency	Percent (%)
1-5	1	6.3
6-10	3	18.8
11-15	3	18.8
16-20	3	18.8
21-25	1	6.3
26-30	2	12.5
31-35	2	12.5
41-45	1	6.3
Total	16	100.0

Table 20: Experience level for the entry level masons

Experience (In Yrs)	Frequency	Percent (%)
<1 Year	1	11.1
1-5	4	44.4
6-10	2	22.2
11-15	1	11.1
16-20	1	11.1
Total	9	100.0

44.44% of the entry level masons have experience ranging from 6-10 years. 11.11% entry level masons had experience between 1-5 years, 18.75% with experience between 11-15 years and another 11.11% with experience of 21-25 years.

2. Experience level of senior masons as entry level masons (helpers)

The table below shows the number of years the senior masons stayed at the position of helpers.

Table 21: Experience of the senior level masons as helpers

Helper years	Frequency	Percent (%)
>1 Year	1	6.3
1-5 Years	6	37.5
6-10 Years	7	43.8
11-15 Years	2	12.5
Total	16	100.0

37.5 % of the masons worked as helpers for a time period of 1-5 years before they became regular masons. 43.8% took 6-10 years and another 12% worked for 11-15 years before they graduate to regular masonry positions.

3. Experience level of entry level masons

Table 22: Experience in the first position- helper

Helper years	Frequency	Percent (%)
<1 Years	1	11.1
1-5 Years	4	44.4
6-10 Years	2	22.2
11-15 Years	1	11.1
16-20 Years	1	11.1
Total	9	100.0

The table shows how long the entry level masons have been in that position. 4 of them are working as helpers for 1-5 years. When compared this to the senior masons, 6 of them moved from the helper position within the same period of time.

It shows that despite 11-15 years and 16-20 years of experience they have not moved up the ladder.

3.1.4. Skills Assessment

1. Marking

It is the process of marking the area and locating the position of different structures to be built on the construction site according to the blue print.

Marking is a skill not possessed by all the masons, as it needs expertise. Masons with this skill are called as marking masons.

Table 23: Skill of marking among the senior masons

Marking	Frequency	Percent (%)
Yes	10	62.5
No	6	37.5
Total	16	100.0

62.95% of the senior masons knew the skill of Marking and 37.5% have not yet learnt the skill.

Table 24: Skill of marking among the entry level masons

Marking	Frequency	Percent (%)
Yes	1	11.1
No	8	88.9
Total	9	100.0

88.88% of the entry level masons did not possess the skill of marking whereas a small percentage of 11.11 claimed to possess the skill.

2. Leveling and Plumbing

It involves the two processes of measuring the vertical and horizontal levels of the erected walls respectively. It is done with a Spirit level/ Plumb bob.

All the senior masons possessed the skill of leveling and plumbing

Table 25: Skill of leveling and plumbing among the senior masons

Leveling and Plumbing	Frequency	Percent (%)
Yes	16	100.0
No	0	0

Table 26: Skill of Leveling and Plumbing among entry level masons

Leveling and plumbing	Frequency	Percent (%)
Yes	2	22.2
No	7	77.8
Total	9	100.0

Among the entry level masons two of them knew the skill of leveling and plumbing.

3. Plastering

Plastering is the process of applying cement to the erected wall. All the senior masons and a small percentage of entry level masons possessed the skill of plastering.

Table 27: skill of plastering among the senior masons

Plastering	Frequency	Percent (%)
Yes	16	100.0
No	0	0

All the senior masons responded that they knew the skill of plastering.

Table 28: The skill of plastering among the entry level masons

Plastering	Frequency	Percent (%)
Yes	1	11.1
No	8	88.9
Total	9	100.0

One among the entry level masons knew the skill of plastering.

4. Concreting

Concreting is the process of erecting a slab by mortar which is the mix of sand, cement, and water. All the senior masons interviewed possessed the skill of concreting while only 11% of entry level masons had the skill of concreting.

Table 29: Skill of Concreting among senior masons

Concreting	Frequency	Percent (%)
Yes	16	100.0
No	0	0
Total	16	100.0

Table 30: Skill of concreting among entry level masons

Concreting	Frequency	Percent (%)
Yes	1	11.1
No	8	88.9
Total	9	100.0

Among the entry level masons one person knew the skill of concreting.

5. Plain Cement Concreting

PCC or Plain Cement Concreting is done on the marked lines of the foundation. All the senior masons possessed the skill of PCC.

Table 31: skill of PCC among the senior masons

Plain Cement Concrete	Frequency	Percent (%)
Yes	16	100.0
No	0	0
Total	16	100.0

Table 32: skill of PCC among the entry level masons

Plain Cement Concrete	Frequency	Percent (%)
Yes	3	33.3
No	6	66.7
Total	9	100.0

3 of the entry level masons had learnt the skill of PCC.

6. Brick laying

Brick laying involves erecting the walls with stone, bricks or blocks. All the senior masons possessed this skill.

Table 33: The skill of brick laying among senior masons

Brick laying	Frequency	Percent (%)
Yes	16	100.0
No	0	0
Total	16	100

Table 34: The skill of brick laying among entry level masons

Bricklaying	Frequency	Percent (%)
Yes	3	33.3
No	6	66.7
Total	9	100.0

Of the total respondents, 33.33% of the entry level masons possessed the skill of bricklaying.

7. Shuttering

Shuttering involves preparing a skeletal framework as a preparatory process for roof laying either with steel or wood. It is considered as a specialized skill. Of the 16 senior masons only two possessed the skill of shuttering.

Table 35: Skill of shuttering among the senior masons

Shuttering	Frequency	Percent (%)
Yes	2	12.5
No	14	87.5
Total	16	100.0

Table 36: Skill of shuttering among the entry level masons

Shuttering	Frequency	Percent (%)
Yes	0	0
No	9	100.0
Total	9	100.0

None of the entry level masons possessed the skill of shuttering

8. Mud Centering

Centering is done with laying a layer of mud on the roof floor.

Centering is also a specialized skill and mud centering is done mostly during the construction of individual houses. About a 68.5% of senior masons possessed this skill.

Table 37: Skill of centering among the senior masons

Centering	Frequency	Percent (%)
Yes	11	68.8
No	5	31.3
Total	16	100.0

Table 38: Skill of centering among the entry level masons

Centering	Frequency	Percent (%)
Yes	1	11.1
No	8	88.9
Total	9	100.0

3.1.5 Skills about the work

From the responses of the entry level and senior masons major tasks and skills of masonry are found out as follows,

Table 39: Skills of entry level and senior masons

Type of Mason	Skills about the work
Entry level Mason	<ul style="list-style-type: none"> - Shifting - Earth work - mortar mixing - Scaffolding
Senior Mason	<ul style="list-style-type: none"> - Marking - Levelling and plumbing - Concreting - Plastering - PCC - Brick laying - Shuttering - Centering

3.1.6 Skill formation - Time period

In order to understand the time period required to form a skill, approximate learning period for the identified skills was found out from the masons. As this process happens on job, the respondents mentioned a longer period of time as their learning period.

The periods of learning for the identified skills are as follows,

1. Duration to learn marking

Table 40: Marking learning period

Duration	Frequency	Percent (%)
<1 Month	2	8.0
1 Month-3 Months	4	16.0
6 Months-9 Months	4	16.0
Not Applicable	14	56.0
Not answered	1	4.0
Total	25	100.0

(Not Applicable- The masons who don't know the skill)

16% of the masons learnt the skill of marking in a period of 1-3 months and another 16% within a period of 6-9 months. It can be inferred that it takes an average of 3- 6 months to learn the skill of marking for a mason during his work from this.

2. Duration to learn levelling and plumbing

Table 41: Levelling and plumbing-Learning period

Duration	Frequency	Percent (%)
<1 Month	6	24.0
1 Month-3 Months	9	36.0
3-6 Months	1	4.0
6 Months-9 Months	2	8.0
Not Applicable	7	28.0
Total	25	100.0

36% among the masons who possessed the skill of levelling and plumbing learnt those skills within duration of 1-3 months and 24% acquired it in less than a month.

3. Duration to learn plastering

Table 42: Plastering- learning period

Duration	Frequency	Percent(%)
<1 Month	5	20.0
1 Month-3 Months	10	40.0
3-6 Months	1	4.0
6 Months-9 Months	1	4.0
Not Applicable	7	28.0
Not answered	1	4.0
Total	25	100.0

40% of the masons acquired the skill of plastering within a period of 1-3 months.

4. Duration to learn PCC

Table 43: Plain Concrete Cement-Learning period

Duration	Frequency	Percent(%)
<1 Month	7	28.0
1 Month-3 Months	10	40.0
6 Months-9 Months	1	4.0
Not Applicable	6	24.0
Not answered	1	4.0
Total	25	100.0

28% of the masons learnt the skill in a period less than 1 month, 40% of the masons learnt the skill of doing PCC in a period of 1-3 months and a 4% in a period of 6-9 months.

4. Duration to learn brick laying

Table 44: Brick laying – Learning period

Duration	Frequency	Percent(%)
<1 Month	4	16.0
1 Month-3 Months	12	48.0
6 Months-9 Months	1	4.0
9 Months-12 Months	1	4.0
Not Applicable	6	24.0
Not answered	1	4.0
Total	25	100.0

Four of the respondents learnt brick laying in a period of less than a month, 12 of them learnt in a period of 1-3 months, 1 among them learnt in 6-9 months and the other 1 in 9-12 months.

5. Duration to learn shuttering

Of the two masons who possessed the skill of shuttering opined they learnt it in less than a month and the other within a period of 6-9 months.

Table 45: Shuttering – Learning period

Duration to learn shuttering	Frequency	Percent(%)
<1 Month	1	4.0
6 Months-9 Months	1	4.0
Not Applicable	21	84.0
Not answered	2	8.0
Total	25	100.0

6. Duration to learn centering

Table 46: Centering – Learning period

Duration to learn centering	Frequency	Percent(%)
<1 Month	4	16.0
1 Month-3 Months	4	16.0
6 Months-9 Months	4	16.0
9 Months-12Months	1	4.0
Not Applicable	12	48.0
Total	25	100.0

Among the masons who knew the skill of centering 4 of them opined that they learnt the skill in a period less than 1 month, 16 % in 1-3 months, another 16% in 6-9 months and 4% in a period of 9-12 months.

3.1.7 Earnings of Masons

The senior masons earn wages which range between Rs. 250- 350 per day. The entry level workers start with a wage of 100-125 and get paid as high as Rs.225-250 per day. This variation in wage depends mainly on the experience and skill level of the workers.

The masons work 6 days a week and are paid their wages on a weekly basis. Depending on the projects' urgency they work overtime. The payment for overtime is done in the following manner.

Overtime of two hours – 25% of the wage

Overtime of a half day – 50% of the wage

Overtime of full day – 100%

Wage earned by the senior masons

The wages earned by the senior masons vary between a minimum of Rs.100-125 to Rs.325-350.

Table 47: Wage earned by the senior masons

Wage	Frequency	Percent (%)
100-125	2	12.5
175-200	1	6.3
250-275	5	31.3
275-300	2	12.5
300-325	4	25.0
325-350	2	12.5
Total	16	100.0

The table shows that a 31.3% of the senior masons earn a wage of Rs. 250-275 per day. 37.5% earn between Rs.300-350 a day. Among the two workers who earned the least wages are found to be less experienced and skilful than the other masons.

The highest number of years of experience is taken and compared with the wage they are getting. Seven among the senior masons fell in the range of experience between 16-45 years. It is found that their wage varied from Rs.250-275 to Rs. 325- 350 which are at the higher range of pay.

Table 48: Experience Vs Wage – Senior masons with highest experience

Experience (In yrs)	Wage Earned (in Rs)			Total
	250-275	300-325	325-350	
16-20	1			1
21-25		1		1
26-30	2			2
31-35	1		1	2
36-40				0
41-45			1	1
Total	4	1	2	7

Table 49: comparison of wage and experience of the senior masons

Wage – Experience Cross tabulation							
		Experience (in yrs)					Total
		1-5	6-10	11-15	16-20	21-25	
Wage(In Rs)	100-125		2				2
	175-200	1					1
	250-275			2	1	2	5
	275-300	1	1				2
	300-325	1	2	1			4
	325-350	1			1	0	2
Total		4	5	3	2	2	16

Looking at the overall picture, there are senior masons who earn between Rs.275- 350 with an experience as short as 1- 5years which indicates that it is not only the number of years of experience that is taken into consideration for higher wage.

Wage earned by the entry level masons

Table 50: Wage earned by the entry level masons

Wage earned per day	Frequency	Percent
100-125	2	22.2
125-150	1	11.1
150-175	4	44.4
200-225	1	11.1
225-250	1	11.1
Total	9	100.0

Majority (44.44%) earn a wage of Rs.150-175 per day.

In the case of Entry level Masons the highest wage earned is between Rs.225-250. The entry level masons who earned the wage between 200 and 250 were found more skilful than the others.

Table 51: Experience Vs Wage : Entry level masons with highest number of experience

Experience (In yrs)	Wage Earned (in Rs)			Total
	100-125	150-175	225-250	
1-5	0	1	1	2
11-15	1	0	0	1
16-20	0	1	0	1
Total	1	2	1	4

The highest number of years of experience of the entry level masons were selected and compared with the wage they received. The figure in the table gives the picture that in the case of entry level masons, the experience and wage are not directly proportional, as the entry level mason with the experience between 1-5 years earns a wage between Rs.225-250 and the entry level mason with 11-15 years and 16-20 years are earning a wage between Rs.100-125 and Rs. 150-175 respectively.

Table 52: Experience – Wage of all the entry level masons

	Experience (In yrs)	<1 YEAR	1-5 Years	6-10 Years	11-15 Years	16-20 Years
Wage (In Rs)	100-125		1		1	
	125-150		1			
	150-175	1	1	1		1
	200-225		1			
	225-250				1	
Total		1	4	2	1	1

The table shows that the highest wages among the entry level masons are between Rs.200-225 and Rs.225-250. The masons with these wages have a work experience maximum of 5 years and 10 years respectively. However, there are also entry level masons with the experience of maximum 15 years with a wage of Rs.125-150.

Present minimum wage to the entry level masons is between Rs.100-125. From the above table, it can be inferred that an increase in wage is not proportionate to the number of years of experience.

Skill possession and wage earned by the masons

The tables below represent the skills possessed by the senior and entry level masons who earn the maximum amount of wages.

Table 53: Skills Vs wage of the senior and entry level masons

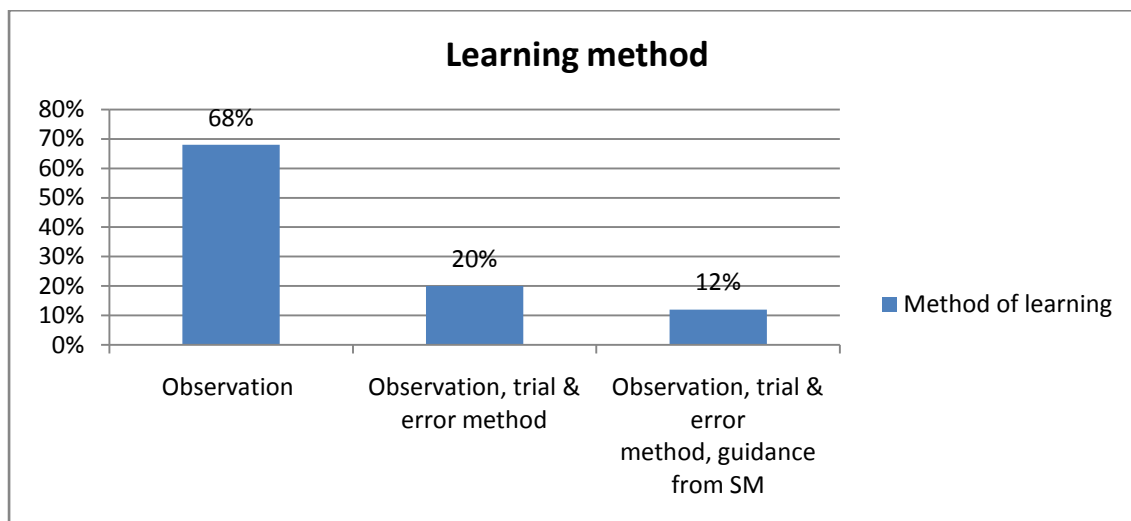
Skills of masonry	Senior masons with higher wage – (Rs.300-350)	Entry level mason with higher wage – (Rs.200-225)
Marking	•	•
Leveling & Plumbing	•	
Plain Cement Concreting	•	•
Concreting	•	
Brick laying	•	•
Plastering	•	
Shuttering	•	
Centering	•	

When the skills of the senior masons earning highest wage was examined it was found that they possessed majority of the masonry skills.

3.1.8 Method of learning

68% of masons learnt the skills through the means of observation, 20% learnt through observation and trial and error method and 12% learnt the skill through observation, trial and error and guidance from the senior mason.

Figure 3: Methods of learning



3.1.9 Increase in wage

40% of the respondents opined that they get an increase of Rs.10-20. 20% of them got an increase of Rs. 20-30, another 20% reported an increment of Rs.30-40 and the other 20% reported a wage increase of Rs. 50-60.

Table 54: Response for the Increment of wage among masons

Wage increment (In Rs)	Frequency	Percent (%)
10-20	2	8.0
20-30	1	4.0
30-40	1	4.0
50-60	1	4.0
Not answered	20	80.0
Total	25	100.0

Table 55: Period of increment in wage for the masons

Period of increment	Frequency	Percent (%)
1-3 Months	3	12.0
3-6 Months	4	16.0
Not answered	18	72.0
Total	25	100.0

The increase in wage happens during a period of 1-3 months, or in six months or in a year depending on the employer and the market demands. The reasons for increase in wage can be the following

- Increase in living cost
- Increase in experience/skill sets
- Supply and demand levels of labour in the market

3.1.10 Feedback on certification

Table 56: Response by the entry level masons on certification of skills

Usefulness of the certificate	Frequency	Percent (%)
Yes	9	100.0
No	0	0
Total	9	100.0

3.2 Tile layers

3.2.1 Social profile:

1. Age

A majority of the respondents belonged to the age group of 20-25 years and the senior tile layers' age falls in the range of 30-35 years.

Table 57: Age of senior tile layers

Age	Frequency	Percent (%)
20-25	2	33.3
25-30	3	50.0
30-35	1	16.7
Total	6	100.0

Table 58: Age of entry level tile layers

Age range	Frequency	Percent (%)
15-20	1	25
20-25	2	50
30-35	1	25
Total	4	100

2. Marital status

Table 59: Marital status of the tile layers

Marital status	Frequency	Percent
Married	7	70
Unmarried	3	30
Total	10	100

70% of the respondent tile layers are married and a 30% are unmarried.

3. Literacy and level of education

All the respondents were found to be literates and had secondary education.

Table 60: Literacy among the senior tile layers

Education	Frequency	Percent (%)
Literate	6	100.0
Illiterate	0	0
Total	6	100.0

Table 61: Literacy among the entry level tile layers

Literacy	Frequency	Percent (%)
Literate	4	100.0
Illiterate	0	0
Total	4	100.0

Table 62: School attended by the senior tile layers

School attended	Frequency	Percent (%)
8-10 Std	6	100.0
Total	6	100.0

All the senior tile layers attended school between 8-10 Std.

Table 63: School attended by the entry level tile layers

Class attended	Frequency	Percent (%)
5-7Std	3	75
8-10 Std	1	25
Total	4	100

Of the entry level tile layers, 3 of them attended school till 5-7 Std and 1 had education up to 8-10 Std.

4. State of origin

Among the tile layer respondents interviewed half of them hailed from West Bengal and the other half constituted workers from Karnataka.

Table 64: State of origin of the tile layers

State of origin	Frequency	Percent(%)
Karnataka	5	50
West Bengal	5	50
Total	10	100.0

5. Family income

Family income of the tile layers ranged from Rs.5, 000- Rs 30,000. 2 of them had a family income ranging between Rs. 10,000-15,000, and another 2 in the range of Rs.20000-25000, with one among them in the family income range of 25000-30000.

Table 65: Family income of the senior tile layers

Family	Frequency	Percent (%)
5000-10000	1	16.7
10000-15000	2	33.3
20000-25000	2	33.3
25000-30000	1	16.7
Total	6	100.0

Table 66: Family income of the entry level tile layers

Income(Rs)	Frequency	Percent (%)
5000-10000	1	25.0
10000-15000	2	50.0
20000-25000	1	25.0
Total	4	100.0

Family income of the entry level tile layers ranged between Rs. 5000 to Rs. 25000. One among the four tile layer's family was in the income group of Rs.5000-10000, two were in the income group of Rs.10000-15000 and 1 in the range of 20000-25000.

6. Family information

The average number of family members of the tile layers was found to be 5 with an average of 3 female members. None of the female members were found to be earning.

Table 67: Family information of the tile layers

7. Average number of family members	5
8. Average number of female adults	3
9. Average number of male children	1
10. Average number of female children	2
11. Average number of male members earning	3
12. Average number of female members earning	1

3.2.2 Work profile

1. Experience at work

50% of the tile layers have been working for 1-5 years. As the learning period for tile laying is lesser, an entry level tile layer can become a full fledged tile layer within this period of time provided the worker has the ability and interest to learn.

Table 68: Experience level of senior tile layers

Experience (In yrs)	Frequency	Percent (%)
1-5	2	33.3
6-10	1	16.7
11-15	2	33.3
16-20	1	16.7
Total	6	100.0

Table 69: Experience level of entry level tile layers

Experience (In yrs)	Frequency	Percent (%)
1-5	3	75.0
6-10	1	25.0
Total	4	100.0

2. Position at work

Among the respondents 4 of them belonged to the category of helper, 1 to the category of contractor and a 5 to the category of senior tile layer.

Table 70: Position at work

Position	Frequency	Percent (%)
Senior tile layer	5	50.0
Entry level tile layer	4	40.0
Contractor	1	10.0
Total	10	100.0

Helpers are the workers who can be considered as the entry level tile layers because they become regular tile layers at a later stage. They help the tile layers in work by doing simple tasks.

Contractors are the people who bring tile layers and helpers to the construction industry. A seasoned tile layer can become a contractor by hiring people under him to provide tile laying service.

A tile layer is a skilled worker who acquired the skills of tile laying over the years.

3.2.3 Skills about the work

1. Floor preparation

Floor preparation involves the tasks of cleaning and tube levelling the floor to be tiled. This is often done by the entry level tile layers. This task does not require much experience or skills hence most of entry level tile layers can possess this skill.

90% of the tile layers are able to carry out this task with an exception of 10% not knowing the skills involved in the base floor preparation.

Table 71: Skill of floor preparation among senior tile layers

Skill of floor preparation	Frequency	Percent (%)
Yes	6	100.0
No	0	0
Total	6	100.0

Table 72: Skill of floor preparation by entry level tile layers

Floor preparation	Frequency	Percent (%)
Yes	3	75.0
No	1	25.0
Total	4	100.0

75% of the entry level tile layers knew the skill of base floor preparation.

2. Tube levelling

Table 73: Skills about tube levelling – senior tile layers

Skill of tube leveling	Frequency	Percent (%)
Yes	6	100.0
No	0	0
Total	6	100.0

Table 74: Skills about tube levelling– entry level tile layers

Tube leveling	Frequency	Percent (%)
Yes	1	25.0
No	3	75.0
Total	4	100.0

3. Mortar Levelling

Cement application involves the processes of preparation of mortar to be used for tile laying and then spreading it for fitting the tile on the floor.

Table 75: Skills about Mortar levelling – Senior tile layers

Skill of Mortar leveling	Frequency	Percent (%)
Yes	6	100.0
No	0	0
Total	6	100.0

All the senior tile layers possessed the skill of mortar levelling.

Table 76: Skills about Mortar levelling – entry level tile layers

Mortar leveling	Frequency	Percent (%)
Yes	1	25.0
No	3	75.0
Total	4	100.0

4. Tile laying and fitting

Tile laying work involves the preparation of the tile to be laid such as tile checking, cutting, polishing, buffing and laying the tile on the floor or wall. All the senior tile layers possessed the skill of tile laying

Table 77: Skills about tile laying and fitting – Senior tile layers

Skill of Tile laying and fitting	Frequency	Percent (%)
YES	6	100.0
NO	0	0
Total	6	100.0

Table 78: Skills about tile laying and fitting– entry level tile layers

Skill of tile laying and fitting	Frequency	Percent (%)
Yes	1	25.0
No	3	75.0
Total	4	100.0

5. Skirting

Skirting is a kind of tile laying at the junction between the walls and floors.

Table 79: Skills about skirting – senior tile layers

Skill of skirting	Frequency	Percent (%)
Yes	6	100.0
No	0	0
Total	6	100.0

All the senior tile layers knew the skill of Skirting.

Table 80: Skills about skirting – entry level tile layers

Skill of skirting	Frequency	Percent (%)
Yes	1	25.0
No	3	75.0
Total	4	100.0

Among the entry level tile layers, 1 entry level tile layer possessed the skill of skirting and 3 didn't.

The following are the tasks/skills involved in tile laying to be performed by the entry level and senior tile layers respectively.

Table 81: Nature of work done by the tile layers

Type of Tile layer	Nature of work
Entry level tile layer	<ul style="list-style-type: none"> - Shifting - Cleaning - Joint filling, - Mortar mixing
Senior tile layer	<ul style="list-style-type: none"> - Tile Polishing & cutting - Buffing - Tube levelling - Mortar levelling - Tile laying & fitting - Skirting - Tile laying with different types of tiles.

3.2.4 Skill formation

The skills of tile laying broadly involve the tasks of preparation of the base floor, Cement application, tile laying and skirting.

The base floor preparation and cement application skills were learnt by 88.9% and 71.4% of the tile layers respectively within a period of less than 1 month. The skills of tile laying were learnt in a period of 1-3 months by 71.4% and skirting by 70% of the tile layers within a period less than 1 month.

Table 82: Learning period for different skills

Skill	Learning Period	Percentage
Base floor Preparation	<1 month	88.9%
Cement application	<1 month	71.4%
Tile laying	1- 3 months	71.4%
Skirting	<1 month	70%

3.2.5 Earnings of the tile layers

The wage level of the tile layers fall in the range of Rs.150-400 per day. The wage of entry level tile layers varies between Rs. 150-175 and that of the senior tile layers is between Rs.250-400 per day.

Table 83: Wage earned by the senior tile layers

Wage	Frequency	Percent (%)
300-325	3	50.0
350-375	2	33.3
375-400	1	16.7
Total	6	100.0

Table 84: Wage earned by the entry level tile layers

Wage	Frequency	Percent (%)
150-175	2	50.0
250-275	1	25.0
300-325	1	25.0
Total	4	100.0

2 of them get wages of RS.150-175. 1 gets a wage between Rs. 300-325 a day and 1 between Rs. 375-400.

Table 85: Comparison of skill level and wage of senior and entry level tile layers

Skills of Tile laying	Senior tile layers with higher wage – (Rs.300-350)	Entry level tile layers Wage- (150-175)
Floor preparation	•	•
Tube leveling	•	•
Mortar leveling	•	
Tile laying	•	
Skirting	•	

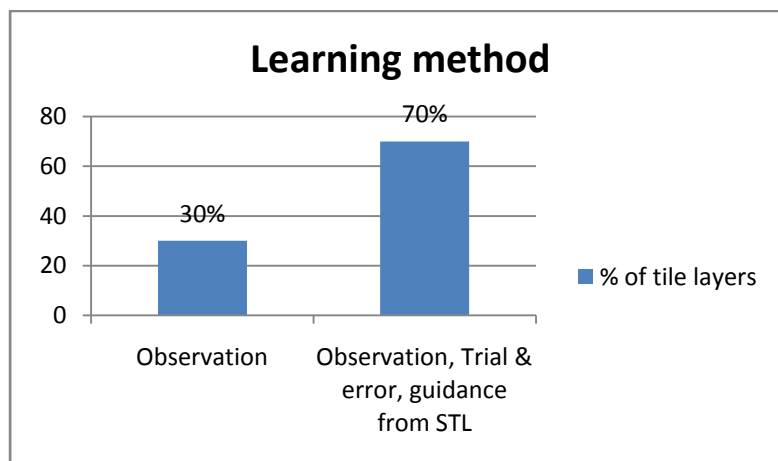
The table shows that the possession of more skills earns more to the senior tile layers when compared to the entry level tile layers.

3.2.6 Method of learning the skills

70% of the tile layers learnt the skills of tile laying through the methods of observation, trial and error and guidance from the senior tile Layers.

The helpers were trained by senior tile layers and the senior tile layers were guided by the engineers or architects.

Figure 4:Method of learning



3.2.7 Feedback on usefulness of certification

The opinions of the respondents on the usefulness of certification of skills were asked and the following responses came out.

Table 86: Wage and experience level of the senior tile layers

Usefulness of certification	Frequency	Percent (%)
Yes	8	80.0
No	1	10.0
Not Answered	1	10.0
Total	10	100.0

IV. Findings

4.1 Skill sets of Masons and Tile layers

The exclusive skills sets of masons and tile layers that are identified through the study are the following,

- Marking
- Levelling and plumbing
- Concreting
- Plastering
- PCC
- Brick laying
- Shuttering
- Centering

4.2 Skill sets of Tile layers

- Mortar mixing
- Tile Polishing & cutting
- Buffing
- Tube levelling
- Mortar levelling
- Tile laying & fitting
- Joint filling,
- Skirting
- Tile laying with different types of tiles.

4.3 Process of skill formation

From the interview with the masons and tile layers and the analysis of the data, it is found that the process of skill formation happened to the entry level workers over the years as they did not undergo any training on skill building. They enter the construction industry inexperienced and unskilled and start learning the work under the mentoring of a senior worker. These new entrants are commonly called by the name 'helpers'. In the study, the term 'entry level worker' refers to these helpers. The senior mason/senior tile layers will have a gang of 6-10 helpers and this is also an opportunity for the helper to learn from his peers. The common tasks carried out by the helpers of masonry scaffolding, mortar mixing and shifting stones, blocks, mortar or any other building material from one place to another. Slowly they absorb the work through

observation of the work done by the senior mason. When the senior masons learn that a helper is good at work, he guides him and entrusts more tasks to that particular helper. By doing this, the senior mason is facilitating the learning process of the worker. It is found that the helper learns the tasks of masonry such as Marking, Levelling, Plumbing, Foundation Laying, Concreting, Plastering, Centering and Shuttering within a period of 3-5 years provided there happens a steady upward learning process which might also include his ability and skills to manage people. This can be followed by a promotion in the position of the helper as a half mason or allowing him to form a masonry gang with a number of helpers. As he keeps working, over the years he identifies and chooses a skill such as Marking, Shuttering or plastering as his area of expertise and happens to be known according to his chosen area of expertise.

In the case of tile laying, the entry level workers learn the skills within a shorter period of time when compared to the learning period of a helper from the masonry. The tasks of a helper/entry level worker in tile laying are found to be shifting, cleaning and mortar mixing. The learning happens through observation, experimentation and the guidance of the senior tile layer.

- 100% of the masons and tile layers entered the industry working as helpers.
- Average daily wage earned by masons ranges from Rs. 200-250 and the average income earned by helpers to masons ranges from Rs.100-120
- Average daily wage of tile layers ranges from Rs. 275-300 and that of the helpers ranges from Rs. 150-175
- It is found that the skill possession rather than the number of years of experience earns better pay to the workers. From the interview with the engineers and workers it was found out that in addition to the possession of skills, the quality of work done and efficiency are also deciding factors for a good pay in the industry. Therefore, irrespective of the number of years of experience a worker can earn a good wage based on the skills he possess and the quality of work done.
- The masons enter the construction at an early age which ranges from 15-20 years and can get to the position of a mason according to his skill levels and this takes an average of 6-10 years.
- It is also found that a 10-15% of entry level masons remain as helpers throughout the working years, though an increase in wage is present in this case according to the industry standards rather than possession of skill sets or experience. The reasons for such stagnation in the occupation may be due to the following reasons,
 1. Such workers might have less motivation to learn new skills,
 2. They keep themselves satisfied with whatever income they earn,
 3. Lack of opportunities
 4. Slow learners
 5. The senior worker, a contractor or an engineer not creating enabling environments for them.

- Training interventions: None of the interviewed masons or tile layers has come across a skill building training program either before joining the work or during.
- Method of learning the skills: All the respondents learnt the skills about the work on job. They learnt the work through the following ways.
 - Observation – By observing the work done by the co-worker or the senior mason
 - Trial and error – Experimentation of the work and correcting the mistakes
 - Guidance from the senior worker, co-worker or engineer
- Trainer: In majority of the cases the trainer is found to be the head mason, with some exceptions of co-worker and the contractor considered as trainer.
- Scope for skill up gradation training program: The respondents were found to be enthusiastic about undergoing skill building training program but not at the cost of leaving their job.
- Majority of the workers expressed their inability to pay for the training program. Even though a range for fees was suggested, it does not sound promising as there were also suggestions for being provided with a stipend while they are in the training period.
- The senior management of the construction industries interviewed expressed hope about such skill training programs considering the fact that the construction industry is facing acute shortage of skilled people for trades such as masonry and tile laying but expressed reluctance in meeting the training expenses. They were also hesitant as they were unsure of retaining the workers trained by them.
- Though mechanization at the construction sites reduces the need for human labour, the need for skilled people in trades are increasing and the demand for such labour far exceeds the supply.
- To increase the productivity of the construction industry it is utmost important that qualitative work is performed at all levels of the workforce in the industry and as above 80% of the workforce is constituted by the unskilled workers the training of these workers will bring up the productivity to a higher level.

V suggestions and recommendations

Based on the findings of the study it is advisable to look for ways that can make skill building programs more effective and successful. It is not only the possession of large number of years of experience and technical skills that help the workers in earning a better position or wages in the construction industry, but also the empowerment of oneself.

It is found that economic mobility of these workers considerably increases when there is a corresponding increase in their self esteem rather than mere possession of technical skills. Training programs incorporating technical skills with soft skills should be seen as the beginning point. Entrepreneurship begins only when a person moves from the Socialized mindset to that of a self- authoring one. This will necessitate the training programs include soft skills (Communication, persuasion, Negotiation) along with that which helps build the self esteem of the trainee. Discussions with the study participants revealed that it is the ability of better self – authorization of a worker that made the difference in terms of better wage or position compared to others who didn't possess it.

Considering the findings a training design may be suggested as follows.

Table 87: Training design

Trainees	Skill sets	Training duration
Masons	-Marking -Levelling and plumbing -Foundation laying -Concreting -Plastering -Plain Cement Concreting -Brick laying -Shuttering -Centering	6 months

Tile layers	<ul style="list-style-type: none"> -Tile Polishing & cutting - Buffing -Tube levelling -Mortar mixing -Mortar levelling -Tile laying & fitting -Joint filling -Skirting -Tile laying with different types of tiles. 	3 months
-------------	--	----------

- Incorporation of soft skills which may include communication, persuasion, negotiation, business skills and basic book keeping along with technical skills up-gradation into the training curriculum.
- Peer learning methods could be used in training programs as co-workers are also found to be a point of learning for the workers.
- Trainers need to be people from the industry itself and from amongst those who have risen in the ranks.
- Setting up training programs of a functional training institute for the labour at the source of procuring them. Building skills before they get absorbed into the sector will not only enable them to have a higher starting wage but also give them the time to acquire the requisite skills beforehand.
- The training programs have to be of short durations and should be with more practical inputs. There is no need of classroom sessions based on functional literacy as this doesn't fit into the learning process of the workers as they belong to the category of illiterates or literates with minimum education.
- The medium of instruction has to be in the language of the candidates.
- The common learning methods among these workers were observation, trial and error and guidance from the senior worker. Hence Observation, experiential learning processes and the guidance from the trainer can be the methods of learning for the workers.
- In the case of training program on masonry the duration can be of 6 months as the senior masons have opined that all the skills of masonry can be mastered within a period of 1-2 years. A three month training which will combine the observation, experiential and guidance by the trainer and another three month for on field learning at a construction site. .

- For the tile layers it takes a period of 6 months to 1 year to learn all the skills of tile laying and as the training programs are going to be for a continuous period of time, a tile laying training program can be structured for a period of 3 months and can be divided into a training period of three one month and an on-field learning period for two months.
- The training programs should come up with certain attractive packages so that the workers will be motivated enough to join the training program. There was a suggestion from the respondents that they would be ready to come for the training program if they are provided the amount of their wage as a stipend. Training programs could be arranged for 1 hour duration each day of the week preferably at the end of the working day. In case of this being attempted, the total duration of the program may have to be longer (6-9 months).
- Certification and testing of the skills have to be done for the workers as all the respondents valued the idea of getting certification.
- Getting the entry level workers as candidates for the training program can be done by creating linkages with the contractors who bring workers from the other states of India.
- Linkages with construction companies for sending their unskilled workers for skill building training and for the placement of the trained workers.
- As far as the existing workers are concerned it is difficult for them to leave the job for skill training. As the work timing of these workers are very much unregulated and as much hard work is involved skill building training and work can hardly happen together.

VI ANNEXURE

6.1 Data collection tool

Research on Skill formation, Enhancement and refinement of Informal Sector Workers – Structured Interview Schedule for Masons

Introduction:

This questionnaire is prepared as part of the “Research on Skill formation, Enhancement and Refinement of the informal sector Workers” which is being conducted to understand the challenges and relevant interventions that can be made towards improving the livelihoods of the construction workers through skill formation, enhancement and refinement.

This research is purely for developmental purpose. We request you to take few minutes out of your invaluable time as your response would benefit us to device programs for the welfare of construction workers.

Declaration of Consent Participation:

I hereby give my consent to provide the necessary information.

Signature of the participant

Id no: _____

(SM-Senior Mason EM- Entry level Mason)

Date:

I. Social Background

1. Name	
2. Age	
3. Gender	Male <input type="checkbox"/> Female <input type="checkbox"/>
4. Marital status	Unmarried <input type="checkbox"/> Married <input type="checkbox"/>

5. Education If Literate, do you know how to	Literate <input type="text"/> Illiterate <input type="text"/> Sign <input type="text"/> Read <input type="text"/> Write <input type="text"/>																		
If attended school	Primary <input type="text"/> Std <input type="text"/> Secondary <input type="text"/> Std <input type="text"/> Others,																		
6.State of origin																			
7.Family Income																			
8. Languages Known																			
	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:10%;">Kannada</td> <td style="width:10%;">English</td> <td style="width:10%;">Tamil</td> <td style="width:10%;">Rajastani</td> <td style="width:10%;">Telugu</td> <td style="width:10%;">Bengali</td> <td style="width:10%;">Oriya</td> <td style="width:10%;">Gujarati</td> <td style="width:10%;">Other</td> </tr> <tr> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> </table>	Kannada	English	Tamil	Rajastani	Telugu	Bengali	Oriya	Gujarati	Other	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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II. Family information

Sl. no	Members of the Family	Age	M/F	Occupation		Earning members	Income	Working Since
				Formal Sector	Informal Sector			
1.								
2.								
3.								
4.								
5.								
6.								

(M- Male F- Female)

8. Number of years working in this industry and the work profile:

Position	Wage	Place	Construction company	No. of years
				Total no.of yrs =

9. What is the nature of work?

-

-

10. What are the materials used?

-

-

-

III. Training:

10. Did you undergo any skills building program/ technical education on the skills (required for this work) before coming to this profession?

Yes

11. If yes, specify

12. Did you undergo any skills building program after joining?

Yes

No

IV. Skill formation – On job training

13. Who trained (trainer)

a. Head Mason

b. Engineer

c. Co-worker

d. Other, Specify

14. Method of learning

Observation	Trial and error method	Other

15. Knowledge and skills about the work (Tick against the skills that you possess and say in what period of time the skill was mastered)

(N- Nil, A- Average, G- Good, V- Very Good, E-Excellent)

Skills/Tasks	Period of time	Wage earned per day with change in every position/Skill	Self assessment of the skill
Shifting			
Scaffolding			
Foundation laying			
Mortar Mixing			
Plain Cement Concrete(PCC)			
Marking			
Levelling			
Plumbing			
Concreting			
Brick laying			
Plastering			
Shuttering			
Centering			
Others			

(H- Helper M- Mason)

16. What are the challenges you faced during the training?

-

-

V. Skill Enhancement

17. Are there any specific skills that you think you need training on?

Yes

No

18. If yes, please list down

-

-

-

-

23. Would you be willing to pay for the training?

Yes

No

24. If yes, what would be the range of fees?

25. Do you think certification of a skill is useful for you to get better pay and opportunities?

Yes

No

26. Suggestions/Comments:

-

-

-

Research on Skill formation, Enhancement and refinement of Informal Sector Workers – Structured Interview Schedule for Tile layers

Introduction:

This questionnaire is prepared as part of the “Research on Skill formation, Enhancement and Refinement of the informal sector Workers” which is being conducted to understand the challenges and relevant interventions that can be made towards improving the livelihoods of the construction workers through skill formation, enhancement and refinement.

This research is purely for developmental purpose. We request you to take few minutes out of your invaluable time as your response would benefit us to device programs for the welfare of construction workers.

Declaration of Consent Participation:

I hereby give my consent to provide the necessary information.

Signature of the participant

Id no: _____

(STL: Senior Tile layer ETL: Entry Level Tile layer)

Date:

I. Social Background

1. Name	
2. Age	
3. Gender	Male <input type="checkbox"/> Female <input type="checkbox"/>
4. Marital status	Unmarried <input type="checkbox"/> Married <input type="checkbox"/>

5. Education	Literate		<input type="text"/>							
	Illiterate		<input type="text"/>							
If Literate, do you know how to	Sign		<input type="text"/>							
	Read		<input type="text"/>							
	Write		<input type="text"/>							
If attended school	Primary		<input type="text"/>		Std		<input type="text"/>			
	Secondary		<input type="text"/>		Std		<input type="text"/>			
	Others,									
6.State of origin										
7.Family Income										
8. Languages Known										
	Kannada	English	Tamil	Rajastani	Telugu	Bengali	Oriya	Gujarati	Other	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

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II. Family information

Sl. No	Members of the Family	Age	M/F	Occupation		Earning members	Income	Working Since
				Formal Sector	Informal Sector			
7.								
8.								
9.								
10.								
11.								
12.								

(M- Male F- Female)

9. Number of years working in this industry and the work profile:

Position	Wage	Place	Construction company	No. of years
				Total no. of yrs =

10. What is the nature of work?

-

-

11. What are the materials used?

-

-

III. Training:

12. Did you undergo any skills building program/ technical education on the skills (required for this work) before coming to this profession?

Yes

13. If yes, specify

14. Did you undergo any skills building program after joining?

Yes

No

IV. Skill formation – On job training

15. Who trained (trainer)

b. Senior Tile layer

b. Engineer

c.Co-worker

d. Other, Specify

16. Method of learning

Observation	Trial and error method	Other

17. Knowledge and skills about the work (Tick against the skills that you possess and say in what period of time the skill was mastered)

(N- Nil, A- Average, G- Good, V- Very Good, E-Excellent)

Skills	At the beginning	Period of time	Wage earned per day with change in every position/Skill	Self assessment of the skill
Joint filling				
Cleaning				
Polishing				
Cutting				
Buffing				
Mortar Mixing				
Tile Laying				
Tube levelling & cleaning				
Tile checking				
Mortar levelling				
Application of Cement				
Laying the tile				
Tile fitting				
Skirting				
Type of tile laying				
Ceramic				
Porcelain				

Glass				
Marble				
Mosaic				

18. What are the challenges you faced during the training?

-
-
-

19. Do you have any Special skills in tile laying?

Yes

20. If yes, please mention

-
-
-

V. Skill Enhancement

21. Are there any specific skills that you think you need training on?

Yes

No

22. If yes, how do you think you can acquire those skills? (And in a short span of time?)

-
-
-

23. Please specify the skills that you want to get trained?

-
-
-

24. What advantages do you think you will have in possessing this skill?

-
-
-

26. If yes, would you be willing to pay for the training?

Yes

No

27. If yes, what would be the range of fees?

Rs. 100-200	Rs.200-300	Rs.300-400	Rs.400-500	Rs.600-700

28. Do you think certification of a skill is useful for you to get better pay and opportunities?

Yes

No

29. If no, why?

-
-

30. Suggestions/Comments:

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5.1 Abbreviations

CHF International	Corporate Housing Foundation international
SVYM	Swami Vivekananda Youth Movement
EM	Entry level Mason
SM	Senior Mason
ETL	Entry level Tile layer
STL	Senior Tile Layer