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# An Appraisal Of The Effects Of Unskilled Labour On Construction Site In Federal Polytechnic Kaura Namoda, Zamfara State

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***Abstract***
*Unskilled labour performance is one of the crucial aspects of labour productivity that requires proper attention for effective project delivery in the construction industry. The level of unskilled workers' low performance and their effect on construction has been seen to be a major factor which contributes to inefficient construction project productivity. Therefore, the objective of this research is to analyse the effects of unskilled labour on the construction site, in Federal Polytechnic Kaura Namoda. The objective was achieved through a structured quantitative method of the questionnaire distributed to sixty active personnel on various construction sites within the Polytechnic. Thirty responses representing 50% were retrieved. The data was analysed using tables and findings showed that low wages, poor training and lack of incentive schemes for unskilled labour were the most significant causes of poor productivity and affect good construction work at Federal Polytechnic Kaura Namoda Construction Sites. The research concluded that the site manager should ensure that all materials required for any task should be made readily available before the date of usage to avoid waste of time and progress of the work as well as contractors should avoid over-time so as not to encounter errors and over stress to the labourer carrying out the work, for a better and quality outcome of any construction project.*

***Keywords:*** *Labour Performance; Construction Site; Construction Industry; Unskilled Labour*

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## I. Introduction

The construction industry occupies a sensitive position as it is perceived to play an essential role in the continuous growth of both developing and developed nations [1]. The role of this sector `is very important because of its output and due to the achievement of social-economic objectives such as shelter, infrastructure and employment opportunities [2]. The vital roles played by the construction industry cannot be overemphasized as it is that the industry's achievement is an impact on every aspect of the economy, and is also responsible for about 16% of the Gross Domestic Product (GDP) and employs approximately 25% of the workforce in Nigeria [3]. It is therefore not surprising that the construction industry is known to be the largest Nigerian industry, employing a good proportion of the workforce and controlling over 50% of the Nation's Gross National Product, [2]. Unfortunately, this giant stride of the construction industry is now gradually being eroded as the present economic problem of the country lasted more than a decade. During the period, the leadership of the country has changed hands six times each regime with different strategies for solving the economic problem. The irony of these strategies is that more worker has had their employment terminated in both the private and public sector at different times. Therefore, the few workers that remain in the construction industry need to be properly managed if productivity is to be improved [4] and it is against the aforesaid statement that this research is carried out to appraise the effects of unskilled labour on construction sites in Federal Polytechnic Kaura Namoda, Zamfara state to answer these essential research questions;

- The relationship between labour performance and the construction site productivity;
- How on the job training to improve unskilled labour performance on construction site.

Labour is seen as the effort expended on a particular task, toil, or work, it is also regarded as an important resource in the construction industry because it is the one that controls the activities of all other resources namely, materials, plant, equipment and finance to enhance adequate productivity in a construction site [5].

### 1.1. OVERVIEW OF THE NIGERIAN CONSTRUCTION INDUSTRY

The construction industry is a major contributor to the GDP of Nigeria. It is a major indicator of the economic growth of Nigeria, there are three basic planning elements: time, cost, and quality. These concepts are in a close relationship with each other in Labour productivity which is also a key concept of construction planning efforts and has a direct interrelationship with the triple constraint mentioned above [6]. Lower labour performance is strongly related to the presence of change of work, disruptions and rework. On average 30% loss of efficiency occurs when changes are done. The most significant types of disruptions are lack of materials and information and having to perform the work out of sequence. These disruptions result in the daily loss of efficiency in a range of 25% - 50%. Labour productivity is also one of the performance indicators to assess the success of the const1ruction project. Because construction is a labour-intensive industry, it can be argued that the workforce is the dominant productive resource [7]. Thus construction productivity is primarily dependent on human effort and performance. Labour productivity is an important index because of the concentration of labour needed to complete specific work [5].

### 1.2. DIFFERENCE BETWEEN LABOUR AND LABOURERS

The term 'Labour' is used for 'worker'. But, technically, it is not correct. Labour and Labourer (worker) are two different things. Labour is an ability to work. Labour is a broad concept because it includes both physical and mental. Labour is a primary or human factor of production [3]. It indicates human resources. A labourer is a person who performs the labour. So labourer means worker. It is a person engaged in some work. A labourer is a person who works in the construction sites, by tradition, though in practice the labourers are individuals that have reliability and strength as core characteristics [7]. Labourers are employed in the building construction site to carry out work such as trench excavation, concrete mixing, block laying, carpentry work, electrical work, mechanical work, etc.

### 1.3. TYPES OF LABOUR

A skill is the ability to perform a productive task at a certain level of competence. [7] maintained that skill is associated with a particular task, a person who does not possess such a skill is unlikely to be able to carry out such a task or will be less productive than somebody who does possess this skill. The added skills are often associated with qualification and their acquisition through formal and informal training and, on-the-job Experience.

#### 1.3.1. SKILLEDSKILED LABOUR

The staff under the skilled labour are of varying abilities ranging from apprentices to trade foremen or supervisors. The apprentice can be described as a beginner who is willing and interesting in learning a certain trade in the construction industry. The three possible, avenues of training this category of people are the school, the workshop and the field [7]. Some of the craftsmen in the category are carpenters, joiners, Manson/bricklayers, electricians, plumbers, mechanics, painters, plant operators, scaffolders, crane drivers, steel fixers, and tile settlers. A skilled labour/worker is any worker who has a special skill, training, knowledge, and (usually acquired) ability in their work. A skilled worker may have attended a college university or technical school.

#### 1.3.2. UNSKILLED LABOUR

This labour on the other side is a category of work that requires no special skill and it is defined as any way of making a living with little or no degree of security of income and employment. They require little or no training to make them perform [5]. They are able-body men and women that perform manual duties. Their major asset, therefore, lies in their strength with a healthy body. They act as assistants to the skilled labour as well. Such as operators or cement masons. The 1$^{st}$ century BC engineer'' Vitruvius'' writes about labourer practices at that time; a good crew of labourers is just as valuable as any other aspect of construction. Other than the addition of pneumatic, labourer practices have changed little. With the advent of advanced technology and its introduction into the construction field, the labourers have been quick to include much of this technology as labourers work.

### 1.4. TYPES OF WORK DONE BY SKILLED AND UNSKILLED LABOUR

Concrete –mixing, Demolition - concrete cutting, pavement breaking, cutting torch, Environmental remediation and Hazardous waste, Fences and land scraping, Street sweeping, carrier - block masonry, Plasterers fireproofing, Paving - paving formwork, Traffic control, striping, signs, Piping - water pipe, sewer and storm drain, Grave digger Loading and offloading- handling of physical goods such as furniture, boxes etc. In addition, work that typically was shunned by journeymen of other skills tradesman/craftsman or was given to their apprentices is generally done by labourers in the absence of apprentices [8].

An example is the operators who in the division of labour have all the equipment. Most operators will not operate the equipment they perceive as lowly such as skid steers, kick-brooms and telescopic handlers, laborers usually are used to operating unless an operator apprentice is available and demands his right to operate. The same is true for most other skills, except the ironworkers who are notorious for protecting their work and not wanting anyone else to touch their steel, tie-wire. The advantage of this system is that many unskilled labourers gain sufficient experience working with skilled labour while earning a higher wage than an apprentice [9]. Many foremen will gradually give a labourer extra responsibilities until they are performing at a journeyman level and can enter a more skilled union as a journeyman.

## 1.5. FACTORS AFFECTING UNSKILLED LABOUR PRODUCTIVITY IN FEDERAL POLYTECHNIC KAURA NAMODA'S CONSTRUCTION SITE

Poor labour productivity is one of the main reasons for cost-overruns and projects falling behind schedule. To help identify and prevent poor unskilled labour productivity on site, below are the list of some of the most recognized factors affecting labour productivity in the construction industry in a recent study [3, 10].

### 1.5.1. Overtime

Scheduling longer workdays than a standard eight-hour work day or weeks greater than a 40-hour work week lower work output and efficiency through physical fatigue and poor mental attitude.

### 1.5.2. Morale and Attitude

The spirit of workers based on willingness, confidence, discipline, and cheerfulness to perform work or tasks can be lowered due to a variety of issues. The most common are increased conflicts, disputes, excessive hazards, overtime, over-inspection, multiple contract changes disruption of work rhythm, poor site conditions, absenteeism, and unkempt workspace.

### 1.5.3. Stacking of Trades

This occurs when operations take place within a physically restricted space with other contractors. It often results in congestion of personnel, inability to use or locate tools conveniently, increased loss of tools, additional safety hazards, and prevention of optimum crew size.

### 1.5.4. Absenteeism and Turnover

There is a great deal of time and money lost associated with high turnover and absenteeism on projects. Construction projects in certain areas with low manpower and high demand for labour will usually be more impacted than others. Extreme weather conditions (such as extreme heat or cold) will also increase absenteeism and turnover. Replacement workers are usually not familiar with the work or area and require experienced workers to stop work and show them what to do. The impact can be up to four days of lost work for each worker.

### 1.5.5. Mobilize/Demobilize

This relates to moving resources on and moving off to projects as a result of changes or delays, causing work disruptions. Productivity may drop during these periods as time is lost when crews move from one area or work assignment to another.

### 1.5.6. Errors and Omissions

Increases in errors and omissions impact labour productivity because changes are then usually performed on a crash basis, out of sequence, cause dilution of supervision, or any other negative impacts.

### 1.5.7. Start/Stop

This results from a work stoppage or suspension of work, which may cause a break in the schedule, usually triggering a start/stop of work activity. This can have a major impact on the productivity and cost of a project. Work scheduled or reassigned during holidays such as Thanksgiving, Christmas, and New Year's, are often impacted by stop-starts. Workers tend to discuss the time off and lose the previous momentum with a drop in productivity before they get back in the routine.

### 1.5.8. Reassignment of Manpower

When workers are reassigned, they experience unexpected or excessive changes, losses caused by move-on or move-off, reorientation, and other issues that result in a loss of productivity.

### 1.5.9. Late Crew Build-up

This is caused when the planned project manpower loading is altered and causes manpower loading to build up slower than planned due to availability, shortage of resources, or competition from resources. Impacts can be more than 10 per cent.

**1.5.10. Logistics**

Insufficient or poor material handling, owner-furnished material, procurement practices, or a lack of controls can cause procurement or delivery problems, as well as other issues. This prevents, delays, or disrupts the normal material workflow to a work area, warehouse, or laydown yard. This can also be a result of the additional replacement or substitution of material due to contract changes, defects, or delays at the worksite.

**1.5.11. Security Check**

This could be caused by workers entering or leaving the area, or from checking in and out, toolbox checks, transport of labour to secure area, and so on.

**1.5.12. Learning Curve**

When crew turnover causes new workers to be added to a crew or additional manpower is needed within a crew, a period of orientation occurs to become familiar with changed conditions. They must then learn work scope, tool locations, work procedures, and so on.

**1.5.13. Hazardous Work Area**

This is caused when working in an area that is classified as hazardous, requiring special safety equipment and clothing. Restrictions may limit the time and exposure of workers to the area, resulting in less time on tools in the area.

**1.5.14. Dilution of Supervision**

This occurs when supervision is diverted from productive, planned, and scheduled work to analyze and plan contract changes, expedite delayed material, manage added crews, or other changes not in the original work scope and schedule. Dilution is also caused by an increase in manpower, work areas, or project size without an increase in supervision.

**1.5.15. Holidays**

If workers work on holidays, there is not only a cost factor for holiday pay, but there is usually a loss of productivity as well. It may be addressed as a moral factor since workers are away from families and working instead of enjoying the holidays, or it can also be factored separately. Either way, there is usually a productivity loss to consider.

**1.5.16. Weather and Season Changes**

Performing work in a change of season, temperature zone, or climate change resulting in work performed in either very hot or very cold weather, rain or snow, or other changes in temperature or climate can impact workers beyond normal conditions

**1.5.17. Shift Work**

This is when work is performed at any time other than the first shift or the morning shift of a workday. Work on second and third shifts is less efficient and may even be based on a shorter work period. The reduced daylight hours and problems trying to pick up where the last shift left off result in less productivity.

**1.5.18. Over-manning**

This is caused when work planners hire too many workers for the estimated work scope and duration. Sometimes, when labour in certain areas is scarce, work planners may overcompensate for potential absenteeism and turnover, which creates overstaffing. Another cause is the false assumption that increased manning will always result in increased work productivity.

**1.5.19. Tool and Equipment Shortage**

This is caused when there is insufficient quantity or quality of tools and equipment to meet the needs of the project.

**1.5.20. Alternating, Staggered, or Rotating Work Schedules**

**Thi**s usually results in unusual scheduled work periods designed to optimize hours worked, attract labour to remote sites, compete for labour resources, and minimize fatigue. Examples include allowing half the workforce to take every other Friday off, (working on four days and then four days off), or rotating crews to work seven days on seven days off.

**1.5.21. Technology Improves Productivity**

A common theme between all these factors revolves around a breakdown in communication of some sort. When tasks aren't communicated effectively or workers do not have a clear understanding of the task at hand, work will come to a standstill.

## II. Materials And Methods

**2.1 SOURCES OF DATA**

The source for data collection in this research work is centred on primary and secondary sources of data. The primary source of data collection refers to the first original information collected [11]. The sources available under the primary form of data include the use of observation, questionnaires, interviews etc.
However, the secondary data comprise data collected from existing literature, data collected by someone else and published examples are journals, textbooks, newspapers etc.

### 2.2 POPULATION OF THE STUDY

The population of this study was drawn from construction professionals, i.e. Architects, Builders, Engineers and quantity surveyors who manage and work on construction projects at Federal Polytechnic Kaura Namoda.

### 2.3 SAMPLE TECHNIQUES AND SAMPLE SIZE

A questionnaire survey was chosen for this research work to ensure simplicity and accuracy. Random sampling techniques were adopted to select the sample frame. Forty questionnaires were distributed, out of which 30 were retrieved and analyzed. More so, the central limit theorem states that, with very few exceptions, no matter what form the underlying population distribution takes, as 'n' increases, the sample distribution of average approaches a normal distribution, thus the normal distribution can be used to approximate probabilities, in case of a reasonably large sample (n is greater than or equal to 30) for normal distribution [11]. A sample size of forty was chosen for the research and administered, from which thirty questionnaires were retrieved, which is considered sufficient for the study based on the assertion of [8], that the result of a survey could be considered significant if the response rate is not lower than 30-40%. Therefore the percentage of the returned questionnaires adequate for can be analyzed.

### 2.4 METHOD OF DATA ANALYSIS

In the analysis of data obtained from the research, descriptive statistics was adopted. Tables and percentage is used to describe the result.

## III. Results

**Table 3.1:** Response on who is an unskilled labour

| Response | No of Respondents | (%) |
|---|---|---|
| This is the category of worker that requires no special skills in a particular job | 10 | 33 |
| This is a way of making living with little or no security of income and employment or training to make them perform well | 3 | 10 |
| These are individual who has no educational background or skills | 17 | 57 |
| None of the above | - | - |
| Total | 30 | 100 |

Source: Questionnaire Administered 2022

The table above shows that 33% agreed that this is the category of worker that requires no special skills in a particular job, 10% slightly agreed that this is a way of making living with little or no security of income and employment and training will make them perform well, while 57% agreed that unskilled labour is individual who have no educational background or skills. This showed that unskilled labour can perform any assigned construction task which required no skill.

**Table 3.2:** Responses on the function of unskilled labour on construction site

| Responses | No of respondents | (%) | |
|---|---|---|---|
| Yes | 23 | 77% | |
| No | 7 | 23 | |
| Total | 30 | 100 | |

Source: Questionnaire administered 2022

The table above showed that 77% agreed that they carry out manual works when assigned by the contractor/site manager as they make use of their manpower to provide services while 23% disagreed. This showed that an unskilled labour function on the construction site is very important.

**Table 3.3** Responses on the factor that affect unskilled labour

| Responses | No of respondents | (%) |
|---|---|---|

| | | |
|---|---|---|
| Yes | 27 | 90 |
| No | 3 | 10 |
| Total | 30 | 100 |

Source: Questionnaire administered 2022

The table above showed that representing 90% agreed, and 10% disagreed that the factors that affect unskilled labour production are: over timing, morals and attitudes, errors and omissions, hazardous working areas, weather and change in season. This showed that unskilled labour production is affected by over timing, morals and attitudes, errors and omissions, hazardous working areas, weather and change in season.

**Table 3.4** response to the types of work done by unskilled labour

| Responses | No of respondents | (%) |
|---|---|---|
| Pavement breaking and concrete mixing (manual method). | 11 | 37 |
| Manual excavation of drain and trenches | 4 | 13 |
| They serve as assistants to the skilled labour | 15 | 50 |
| Total | 30 | 100 |

Source: Questionnaire administered 2022.

The table above showed that 37% agreed that Pavement breaking and concrete mixing (manual method), 13% agreed that Manual excavation of drains and trenches are works done by labour, and 50% agreed that the unskilled labour serves as assistant to the skilled labour in the construction site. This showed that the type of work done by unskilled labour involves excavation of trenches, breaking of pavement, and assisting the skilled labour.

**Table 3.5** Response to enhancing the proper performance of unskilled labour

| Response | No of respondents | Percentage |
|---|---|---|
| Strongly agreed | 28 | 93 |
| Disagreed | - | - |
| Agreed | 2 | 7 |
| Undecided | - | - |
| Total | 30 | 100 |

Source: Questionnaire administered 2022

The above showed that 93% strongly agreed, and 7% agreed that, the factors to be employed to enhance the proper performance of unskilled labour is the introduction of incentives and means of motivation for unskilled labourers. This showed that for improved performance of unskilled labour on construction sites, there is a need for motivation with good incentives.

**Table 3.6:** Responses on what contributes to the employment of unskilled

| Responses | No of respondents | (%) |
|---|---|---|
| Strongly agreed | 9 | 30 |
| Disagreed | 1 | 3 |
| Agreed | 20 | 67 |
| Undecided | - | - |
| Total | 30 | 100 |

Source: Questionnaire administered 2022

The table above showed that 3% disagreed, while 30% strongly agreed, and 67% agreed that the reason for employing unskilled labour is due to inadequate construction plants. This showed that the Nigerian construction industry is faced with the challenges of inadequate construction plants required.

**Table 3.7:** Responses to the solution to improve performance of unskilled labour

| Responses | No of respondents | (%) |
|---|---|---|
| Yes | 26 | 86 |

| | | |
|---|---|---|
| No | 4 | 14 |
| Total | 30 | 100 |

Source: Questionnaires are administered in 2022

The tables above showed that 86% agreed that unskilled labour needs training and incentive while 14% disagreed. This showed that organizing a short training program before the commencement of work and proper incentives should be administered to labourers to improve their performance on site.

**Table 3.8:** Responses on the reason for the shortage of unskilled labour

| Responses | No of respondents | (%) |
|---|---|---|
| Yes | 30 | 100 |
| No | 0 | 0 |
| Total | 30 | 100 |

Source: Questionnaire administered 2022

The table above showed that all the respondents agreed that location (distance) causes shortage and cost of labour on construction sites.

**Table 3.9** Responses to the help rendered by unskilled labour.

| Responses | No of respondents | (%) |
|---|---|---|
| Strongly agreed | 5 | 16.7 |
| Disagreed | 10 | 33 |
| Agreed | 15 | 50 |
| Undecided | - | - |
| Total | 30 | 100 |

Source: Questionnaire administered 2022

The table above showed that 16.7% strongly agreed, 33% disagreed and 50% agreed with the idea that 75% of assistance needed in the construction industry is rendered by unskilled labour. This showed that most construction site tasks are carried out by unskilled labour.

**Table 3.10** Responses on the causes of low performance

| Response | No of respondents | (%) |
|---|---|---|
| Strongly agreed | 17 | 57 |
| Disagreed | - | - |
| Agreed | 13 | 43 |
| Undecided | - | - |
| Total | 30 | 100 |

Source: Questionnaire administered 2022

The table above showed that 57% strongly agreed with the fact that **t**he causes of low performance of unskilled labour in construction projects mainly arise due to unfair wages, lack of motivation and proper training, inclement weather conditions, change in design, use of low-quality tools and equipment and delay in delivery of material to sites while 43% agreed with the same fact. This implied that for greater performance of unskilled labour, all the above responses should be considered.

**Table 3.11** Response to factors that enhances employment of unskilled labour

| Response | No of respondent | (%) |
|---|---|---|
| Insufficient machinery for construction projects of good quality. | 9 | 30 |
| Poor/low funding for construction projects | 3 | 10 |
| All of the above | 18 | 60 |
| None of the above | _ | _ |
| Total | 30 | 100 |

Source: Questionnaire administered 2022

The table above showed that a greater percentage of the 60% strongly agreed that the actual cause of employing unskilled labour is due to insufficient machinery while 30% agreed that insufficient machinery and to the cause, and 10% fairly agreed that poor funding is the reason for the employment of unskilled labour.

**Table 3.12** Responses on the need for unskilled labour on the construction site.

| Responses | No of respondents | (%) |
|---|---|---|
| Strongly agreed | 10 | 33 |
| Disagreed | 6 | 20 |
| Agreed | 14 | 47 |
| Undecided | _ | _ |
| Total | 30 | 100 |

Source: Questionnaire administered 2022

The table above showed that 20% disagreed with the fact that unskilled labour is highly needed on the study area construction site while 33% strongly agreed with the fact that unskilled labour is needed on the construction sites because most skilled labourers (masons, plumbers, electricians, carpenters) need extra hands in order to perform their work properly.

**Table 3.13 Responses** on the best method to employ labourer

| Responses | No of respondents | (%) |
|---|---|---|
| Strongly agreed | 2 | 7 |
| Disagreed | 1 | 3 |
| Agreed | 27 | 90 |
| Undecided | _ | _ |
| Total | 30 | 100 |

Source: Questionnaire administered 2022

The table above showed that 7% agreed, 3% disagreed with this fact showing a little or no difference while 90% strongly agreed that the best method for employing unskilled labour on the construction site is through the mean of involving an organized team of labourers at the site work which will result to a greater performance percentage.

### 3.2. SUMMARY

Despite the effort of the construction industry to improve construction work on every construction project, it was not clear what the situation was at the Federal Polytechnic Kaura Namoda construction site. It was in the light of this that this research intended to show the method by which unskilled labour affect productivity on construction site. Identifying the prevailing problems of unskilled labour, and recommending ways to improve unskilled labour's ability to meet up with the required performance on site. The majority of unskilled labour employed on the construction site are mostly relatives of some family within the location (familiarity) instead of licensed site construction workers. Lastly, the empirical findings revealed that unskilled labour plays a very vital role on the construction site but is barely recognized due to a lack of skills and training for the job and this has been affecting most construction project standards, quality and performance. This justifies the pieces of literature [2, 5].

## IV. Conclusion

It has been stressed that the importance of unskilled labour in the management of the construction industry cannot be over emphasized when it comes to their ability to be productive on construction projects. The effort of unskilled labour on the construction site was a major objective of the research which was achieved through a well-structured questionnaire survey from selected construction site worker force such as the Project Manager, Project Engineers, Site Engineer and Supervisor, Builders, Quantity Surveyors, Architects, Civil Engineers, Mechanical and Service Engineers. The research concluded that the site manager should ensure proper training of workers before employment, as well as the contractor, should a provide proper incentive scheme during any construction project (work in progress) with strict supervision of work in progress to avoid unwanted errors. Furthermore, the site manager should ensure that all materials required for any task are made readily available before the date of usage to avoid waste of time and progress of the work as well as contractors should avoid over time so as not to encounter errors and over stress to the labourer carrying out the work, for a better and quality outcome of any construction project.

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