Linking Skill Acquisition with Employee Productivity for Enhanced Project Delivery in Bayelsa State, Nigeria

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Abstract:
As the most extensive constituents of human resources for construction projects, construction employees impact the production process in various ways with attendant effects on productivity. Therefore, this survey examines how skill acquisition influences employee productivity as its major determinant with a view towards enhancing delivery of quality project outputs. Data for seventy-five (75) survey participants, selected by convenience sampling (with sixty-two (62) returned valid) and comprising construction professionals (Architects, Builders, Engineers, Quantity Surveyors, Land Surveyors, Estate Surveyors and Valuers), nonprofessionals (Artisans, Craftsmen and Labour Assistants), and external stakeholders (Clients and End Users) in Bayelsa State, were sourced quantitatively through a questionnaire. SPSS 24 was employed for descriptive analysis of participants' demographic background and inferential statistics for relative significant influence. The results reveal the following dimensions of employee productivity to be primarily impacted: enhanced proficiency – reduce and minimise errors; increased efficiency – perform tasks quickly and accurately; improved quality – equipped for delivery of quality goods and services; engender competitiveness – healthy competition among the workforce; reduced downtime – troubleshoot problems, quick maintenance, minimising downtime; and efficient equipment usage – maximising equipment utilisation (with the last two sharing the same ranking). The study concludes that skill acquisition significantly enhances employee productivity by its capacity to reduce errors, enable faster and more accurate task execution, and ensure consistent delivery of quality outputs. Furthermore, the CPBOs are enjoined to prioritise acquisition of such skills that positively influence these dimensions of employee productivity, then design and adopt complementary training initiatives. Finally, the existing body of knowledge on employee productivity is enriched by examining and revealing its various dimensions influenced by skill acquisition as its major influencer.

Keywords: **Skill acquisition, employee productivity, construction projects, project delivery.**

1. Introduction

Globally, completion of a construction project within the ambit of stipulated conditions that align with the interests of major stakeholders is the ultimate goal. The fragmented nature of construction projects allows multiple players, from the initiator to the least worker on the project site, to play a significant role in ensuring the realisation of project objectives. The aforementioned is a product of integrating human, capital, and material resources, with sound management acumen to drive the production process to its destination steadily. Among these, Brent and Leighton [1] regarded human resources as the most credible, authentic, rampant, and key component. Moreover, the largest constituent of resources in any given project is the workforce or employees, from project managers to casual labourers on site, whose productivity hangs in the fate of the project. Therefore, productivity as a determinant of project success is a widely researched subject within the construction industry, the world over [2].

Globalisation surge and competitiveness towards hi-tech products, including innovative building/construction projects, culminate in high demand for improving employee productivity, and as a determinant of international competitiveness, poses a significant concern in Nigeria. With the emergence of the Nigerian construction industry as a catalyst for economic growth and development, it still grapples with problems of employee productivity. A large chunk of the Federal Government budget, about NGN 548.6 billion (USD 922.2 million), is dedicated towards road projects. At the same time, NGN 99 billion (USD 166.4 million) is earmarked for the construction of 20,000 affordable housing units, showcasing her grit at addressing infrastructural and housing deficits [3]. A surge in foreign direct investment had also been witnessed recently in Nigeria. An example among others is the injection of USD 1 billion into Lafarge Africa, a subsidiary of Holcim, a

Swiss cement manufacturer, by China's Huaxin Cement after the acquisition of its 84% stake. The said amount was part of a strategy for restructuring and concentration on high-growth markets [4]. The same Reuters [5] reported on bilateral agreements between Nigeria and France worth €300 million for funding infrastructural projects spanning healthcare, agriculture and food security.

Employees with high-level productivity are required to deliver the aforementioned infrastructural projects. On the other hand, employee productivity is highly correlated with the skillfulness of the workforce. Skillfulness depends on skill acquisition and tends towards training for development before exerting a significant influence on productivity. Acquisition of relevant skills is the core root of skillfulness backed up with training, which features prominently in employees' productivity, and according to Odesanya [6]**,** should be given priority by construction organisations. Generally, skill acquisition exerts a huge influence on employee productivity and overall project delivery [7]. A prominent feature of labour force development is skill training for either individuals or small businesses [2]. Digitalisation has taken over industrial sectors globally, with the construction industry increasingly incorporating digital tools into its operations. The incorporation of automation and smart construction systems into today's operations demands that workers scale up and be digitally compliant. Digital literacy is essential for skilled employees (both technical (hard) and soft) in order to align and remain relevant within the modern software-controlled project environment. Olojede and Akinradewo [8] emphasised the urgency of equipping individuals with the requisite knowledge to handle and use drones, robotics, and Building Information Modelling (BIM) for construction operations. The modern trend in construction has broadened the definition of skill to capture both technical or complex skills and digital savvy and competence in soft skills. Previously, traditional craftsmanship was acquired through apprenticeship and vocational training centres and was exclusively reserved for the illiterates in Nigeria, while soft or digital skill was meant for the educated. However, the paradigm shift is for skilled employees in today's construction world to demonstrate technical proficiency with digital innovations and function with precision and efficiency on specialised assignments, regardless of educational level.

"The question then arises: Does Nigeria possess this category of skilled workforce to cope with the influx of anticipated funds and investments into the country? And what about the productivity level? Would it guarantee the delivery of expectations in the long run, or would the nation continue in a vicious circle of shady and abysmal project delivery, orchestrated by the lack of a skilled workforce? These, and many more, are the agitating issues that concern industry stakeholders." The recent survey findings by Olasunkanmi *et al*. [9] decried the severity of the shortage of technical and digital skills in the Nigerian industry. While the Western world is moving towards automation in construction, Nigeria is still grappling with the manual delivery of construction projects. This has crippled the expectation and already eroded productivity, battering it further.

Therefore, this survey aims to identify the aspect of employee productivity significantly impacted by skill acquisition to enable stakeholders to utilise resources efficiently by focusing on the area that yields the maximum. The objective shall be to evaluate the influence of skills acquisition on employee productivity in the study area. The study outcome shall allow construction practitioners to identify and invest in the most economical and efficient skill that yields maximum output and boosts productivity. Additionally, the consultants within the industry are better placed by the study's findings to manage and guide clients on the best operation to be adopted for efficient and prompt delivery, devoid of overruns of any kind. This is realisable after identifying the right employee with the appropriate skill for the operation. Furthermore, the multi-faceted benefits of the study allow construction contractors to imbibe the global best practice for construction employee training and retention thereafter. Also, to the policy formulator, strategies that ensure improved and sustained project delivery are easily crafted and appropriately strengthened through standard construction labour services. Finally, the supervisory Government agency for construction works and allied matters is positioned correctly in crafting laws to regulate construction employee productivity. A quantitative research design approach that utilises questionnaires as means of data collection from construction professionals, non-professionals and external stakeholders who were conveniently selected in the study area was employed. The measurement items were derivatives of extensive and rigorous literature review.

I. SKILL ACQUISITION AMONG CONSTRUCTION EMPLOYEES

Skill acquisition provides the succour through which man adjusts to life; employees offer it in exchange for remuneration at the workplace. An employee's exchange of satisfactory skills for a productive venture, especially in the construction industry, attracts a commensurate reward from the contented employer. The sustenance of the process not only earns promotion but also retains employees and enhances productivity [10]. Although skill is a product of learning, an individual's natural abilities are fundamental to their development through conscious training and hands-on experience.

Much had been discussed about training and development without cognisance of the denominator – skill acquisition. Skill acquisition is a prelude to training and development, as it is the bedrock they stand on. Skill deficit among construction labour, especially the artisans and craftsmen, was reported by researchers [11, 12, 13, 14, 15]. The outcome of the study by Olasunkanmi *et al*. [9] revealed the level of shortages of soft or digital skill among professionals in the industry.

The imperativeness of differentiating skill acquisition from training and development in the context of construction industry is evident and desirable. Skill is the capacity of an employee to accomplish a given task with required accuracy and certainty [16]. It is either learnt or acquired formally in the classrooms or through vocational training centres. Skill involves a mix of precision, dexterity, and ability that combine with applied knowledge to execute tasks. Therefore, skill is regarded as the speed, accuracy, expertise, dexterity and competence with which operations are executed repeatedly through manual and mental exertion. ILO [17] emphasised the central role of impactful skill development in enhancing productivity for better living conditions and growth by connecting education with vocational training.

A. *Training and Development*

Primarily, training is a task-centred activity tailored towards capacity enhancement on the current or future assignment. Training focuses the trainee's mind in a particular direction within the task perspectives; it aims to develop already acquired skills, knowledge, methods or techniques. All such learning or teaching activities that the employee undergoes in applying the basic skills and knowledge requisite to efficient and effective delivery of an assignment in an organisation are training. Meanwhile, development centres on capacity building in proficiency and expertise for management staff and executives on current and future jobs. It is designed for the all-around growth of employees to acquire in-depth knowledge. Both training and development are ongoing trajectories of imparting new ideas that culminate in better fashioning of employees for overall organisation performance.

Summarily, skill is universal while training is job-focused or task-centred. Although training is strategic to honing the acquired skill for enhancing employee productivity in any organisation; the place of skill acquisition should not be undermined. The training in this context should not be understood as the process an employee undergoes in acquiring basic skills, but rather as something that is undergone while on the job or thereafter.

II. Skilled Workers and Employees in the Construction Industry

The lifelong notion supported by Liepmann [18] regards a skilled worker as an apprentice who is initially encouraged to acquire technical know-how and expertise in specific trades and crafts and subsequently becomes a supervisor. Technical schools, vocational centres and workshops serve as an avenue for their apprenticeship; sometimes, hands-on job experience provides an alternative. Another author defined a skilled worker as a unit of the labour force vested with superior capacity to attract economically viable significance through acquiring technical expertise, knowledge and applied training [19]. These two definitions were biased towards only a workforce category, ostracising the others. Usually, **s**killed workers were enthused as problem-solvers by exerting mental reasoning in handling complex assignments with precision and dexterity. However, the aforementioned best describes construction professionals who have acquired some basic skills; digital and in some cases vocational or technical in the course of undergoing one training or the other. This misconception resulted from the words - worker, labour and employee. In the Nigerian construction industry, workers refer to both the unskilled and semi-skilled labour, while employees can be considered highly skilled professionals. Masonry, carpentry, tiling, steel fixing/iron bending, electrical installation, painting, HVAC maintenance, plant and equipment operation/maintenance, and all such occupational trades and crafts befit this category [9]. Nevertheless, a tertiary educational qualification is not a yardstick for exhibiting proficiency and mastery in this workforce; it is strategic training [20]. Meanwhile, the above definitions are appropriate for all categories of workforce in today's technology-driven construction operations, where robotics, drones, and laser software machines hold sway. Therefore, construction employees capture all of them without traces of bias.

III. Construction Employee Productivity

Construction employees, as a key component of human resources, form a chunk of the construction budget**;** hence, the significance of their productivity to construction managers and stakeholders in particular. The high-level profitability expectation from project completion as a business concern, satisfaction in ameliorating infrastructural deficit, and industrial economic increase are potent yardsticks for measuring employee productivity. Rathnayake and Middleton [21] enthused that the upward trajectory of high productivity discourse among industry practitioners stems from its penchant for economically viable potentials. However, the decline in productivity of construction employees has been directly linked with deficits and shortages of skills, both digital (soft) [9] and vocational (hard) [11]. Sectoral comparisons of employee productivity in manufacturing, with significant progress and the gradual advancement of the construction industry**,** bring another narrative [22]. Manufacturing operates on highly regulated and automated machines, whereas the uniqueness and project-focused feature of the construction industry product is labour-intensive, with some degree of diversity and uncertainty. Again, enhancing employee productivity is propelled by the desire to deliver projects within restricted budgets and timelines, far beyond abstract exertion and pragmatic requirements. Therefore, the attention on construction employee productivity stems from its backwardness in industrial sector comparison and the urgency to maximise lean resources for optimum performance [23].

Researchers have studied construction labour, worker and employee productivity under various themes [10] with some purely academic exercises. In contrast, this current study views productivity from the perspective of the relationship with employee skillfulness. Manoharan *et al.* [24] measured productivity based on employees' potency and efficacy at delivering a given task; functions of display of skillfulness via competence, dexterity, precision and rapidity of job execution. This underscores the importance of skill as essential to project success [25] and a major influencer among many other factors [26]. Dixit *et al.* [27] regarded skill as the topmost among worker-related factors influencing productivity. If productivity, according to Kenton [28], is a measure of input and output of job execution by an employee within a specified time limit, then the method and know-how of execution cannot be neglected. The ripple effect of productivity on construction project delivery cannot be overemphasised. A significant drop in productivity increases labour cost and vice versa [29], cumulatively impacting the delivery process. Planning the labour schedule is a significant benefit of productivity estimation in construction [30]. The concept of industrial sector comparison of employees' productivity in manufacturing and construction is vague [31]. The repetitive nature of the iterated and standardised manufacturing process encourages steady production operations and enhances noticeable efficiency advancements. Implementation of standardisation in the construction industry is near-impossible because of its bespoke and site-centric product under diverse and varying project

types, nature, environment, conditions and complex designs [32]. This standardisation problem culminates in exploring alternatives by injecting the workforce with in-depth skill and technology know-how in driving construction operations.

IV. Study's underpinning theories

There are several underpinning theories for the study, ranging from social learning theory to resource dependency theory. Broto and Dewberry [33] posited that social learning theory propels people to imitate and observe their social environment as a learning process. This aptly applies to labour-intensive construction operations where employees are encouraged to learn through collaborative and peer group understudying, training, mentoring and joint effort.

The fulcrum of resource dependency theory upholds organisations' survival on utilising external resources for efficient delivery of objectives [34]. From the construction industry's perspective, this implies that a skilful workforce and other resources determine the realisation of the goal of construction project-based organisations (CPBOs), which is efficient project delivery. The Absence of skilled employees stalls the process and results in poorly delivered products.

The capability approach theory, on the other hand, emphasises the need for investment in developing human and individual capacity instead of pursuing economic advancement only [35]. The theory took cognisance of the significance of the uniqueness of an individual's possessive capabilities, such as skills, knowledge and know-how required for his/her fulfilment. According to the theory, construction employees should be empowered to learn and acquire new skills and knowledge for their development to enable them to shoulder higher responsibilities, equipped with a decision-making process and hold the workplace in high esteem above the economic performance. The ultimate goal of the capability approach theory is to recognise each employee's capabilities, which, when developed further through training, position them to contribute to the successful accomplishment of the construction projects.

V. Research Methodology

Primary data for the study examining the influence skill acquisition exerts on employee productivity was collected using a descriptive questionnaire based on a quantitative design approach. Bless *et al*. [36] and Dixon *et al*. [37] believed the purpose of data collected by the quantitative research approach is basically to analyse patterns, averages, and frequencies. According to Newman [38], researchers can extrapolate survey findings to a broader population through a quantitative research approach. The survey has three groups of industry practitioners in Bayelsa State as the population. Architects, builders, engineers, and quantity surveyors formed the professional group. Skilled artisans/craftsmen and labour assistants, referred to as nonprofessional, were dominantly contained in the second group. At the same time, external stakeholders, mainly the end users and the clients, were members of the third. All participants in these groups were drawn from various strata of the construction industry, from academia to consulting/contracting firms, ministries and departmental agencies (MDAs), and individuals. Convenience and purposive sampling methods were adopted to reduce the population to the desired sample size due to time constraints, cost, and local terrains. A convenient sample size of seventy-five (75) was considered for the survey in lieu of the reasons previously mentioned. The questionnaire was structured into two parts, part a consists of participants' background information with various scales used for eliciting responses. Part two sought the feedback on dimensions of employee productivity influenced by skill acquisition on a likert scales of 1 to 5 with 1 representing very low influence and 5 very high influence. Participants' demographic information was analysed descriptively with averages and percentages while inferential analysis was achieved by calculating relative significant index from mean item score, all as output of SPSS version 24.

VI. Data Presentation And Discussion of Results

A. *Response Rate*

In line with the suggestion of Sataloff and Vontela [39], the research instrument has eighty-two percent (82%) response rate and is therefore valid for survey consideration, as sixty-two (62) out of seventy-five (75) distributed were valid for analysis. The composition of respondents, as displayed in Table I, has 51.6% for professionals, 29% for nonprofessionals, and 19.4% for external stakeholders.

TABLE I
RESPONDENT RESPONSE RATE

Respondent Group	**Number of Respondents**	**Percentage (%)**
Professionals	32	51.6
Nonprofessionals	18	29.0
External stakeholders	12	19.4
Total	62	100

B. *Demography and General Information of Research Participants*

With 75.8% male to 24.2% female counterparts as participants in Table II, the situation in Bayelsa State cum Nigeria, is not different from that witnessed across the globe. Although the construction industry is male-dominated as it is believed to be masculine, concerted effort is required to encourage female participation for an all-inclusive contribution. Likewise, more than 93% of survey respondents fall within the Nigerian working population of between 30 and 60 years, with no single participant falling below 20years in Table II. This indicates the vibrancy of the construction industry in the study area and Nigeria. The construction industry experience of respondents in Table II reveals that sixty per cent (60%) have between 6 - 10years and above 20years of experience. Less than twenty percent (20%) of respondents who are external stakeholders were not included in this category; this does not invalidate the research outcome.

TABLE II
DEMOGRAPHIC OF RESPONDENT

Category	Subcategory	Frequency	Per cent (%)
Sex	Male	47	75.8
	Female	15	24.2
	Total	62	100.0
Age	21–30	13	21.0
	31–45	31	50.0
	46–60	14	22.6
	Above 61	4	6.5
	Total	62	100.0
Experience (Years)	1–5	17	27.4
	6–10	13	21.0
	11–15	8	12.9
	16–20	4	6.5
	Above 20	8	12.9
	Not applicable	12	19.4
	Total	62	100.0

Referring to Table III, participants' general information, such as educational background, professional bodies and number of acquired skills. Most participants possessed the required educational background to participate in the survey, with almost eighty-two percent (82%) having OND as the least qualification. The core professionals at the execution stage of construction projects numbered up to fifty-three per cent (53%); skilled employees, labour assistants and external stakeholders who play significant roles in project delivery comprise the remaining forty-seven per cent (47%). The professionalism and applied knowledge of survey participants on the theme further validate the reliability of the data and the feedback provided. Both professionals and non-professionals, totalling about sixty-nine per cent (69%), acquired one or more skills applicable to construction operations.

TABLE III
GENERAL INFORMATION OF RESEARCH RESPONDENTS

Characteristics	Categories	Frequency (no)	Percentages (%)
Educational background	SSCE	11	17.7
	OND	6	9.7
	HND	6	9.7
	BSc/BTech	23	37.1
	PGD	2	3.2
	MSc	7	11.3
	PhD	4	6.5
	Others	3	4.8
	Total	62	100.0
Professional bodies	NIA	6	9.7
	NIOB	8	12.9
	NSE	8	12.9
	NIQS	6	9.7
	NIESV	2	3.2
	NILS	3	4.8
	None	29	46.8
	Total	62	100.0
Number of acquired skills	One	19	30.6
	Two	24	38.7
	None	19	30.6
	Total	62	100.0

C. *Influence of Skill Acquisition on Employee Productivity*

The dimensions of employee productivity influenced by skill acquisition, based on a literature review and archived data from organisations as presented to respondents, were analysed and ranked, and their relative significance indexes (RSI) are displayed in Table IV.

Referring to Table IV, the analysis of the dimensions of employee productivity influenced by skill acquisition reveals that enhanced proficiency, with an RSI of 0.713, ranked the highest. This indicates that respondents strongly associate skill acquisition with reducing and minimising errors in construction tasks. Followed by increased efficiency and improved quality, both with an RSI of 0.700 ranked 2nd, which emphasises that skill development enables workers to perform tasks quickly, accurately, and with consistent delivery of quality outputs. Moderately ranked factors include engendering competitiveness (RSI = 0.639, 4th), reduced downtime and efficient equipment usage (RSI = 0.632, 5th), as well as strengthening regulatory frameworks (RSI = 0.619, 8th). These reflect the role of skill acquisition in enhancing organisational performance, equipment utilisation, and compliance, though they are considered slightly less influential compared to proficiency and quality. Moreover, dimensions such as material wastage reduction (RSI = 0.613, 9th), compliance with project standards (RSI = 0.610, 10th), and improved safety (RSI = 0.587, 11th) suggest that while skills contribute to safer and more resource-efficient operations, these outcomes are not perceived as top priorities.

The least influential aspects were linked to softer outcomes such as job satisfaction and motivation (RSI = 0.577, 12th), self-reliance and confidence (RSI = 0.561, 13th), optimised site layout and logistics (RSI = 0.561, 13th), positive work environment (RSI = 0.555, 16th), and transparency and ethical practices (RSI = 0.522, 17th). These results suggest that respondents view skill acquisition as more critical for technical and task-related improvements than for shaping workplace culture or ethical practices.

TABLE IV
PERCEPTION OF SIGNIFICANT INFLUENCE OF SKILL ACQUISITION ON EMPLOYEE PRODUCTIVITY

S/N	Dimensions of employee productivity influenced by skill acquisition	N	RSI	Rank
1	Increased efficiency - perform tasks quickly and accurately.	62	0.700	2nd
2	Improved quality - equipped for delivery of quality goods and services.	62	0.700	2nd
3	Engender competitiveness – healthy competition among workforce	62	0.639	4th
4	Enhanced innovation – generating new ideas/solutions, driving innovation and technological advancement.	62	0.629	7th
5	Reduced downtime - troubleshoot problems, quick maintenance, minimising downtime.	62	0.632	5th
6	Efficient equipment usage - maximising equipment utilisation.	62	0.632	5th
7	Improved safety – safety awareness; reduced accidents and injuries.	62	0.587	11th
8	Enhanced proficiency – reduce and minimise errors.	62	0.713	1st

9	Material wastage reduction – through proper handling technique	62	0.613	9th
10	Resource preservation – through diligent work plan structure	62	0.558	15th
11	Increased job satisfaction and motivation - for career development	62	0.577	12th
12	Self-reliance and confidence – boost workers' confidence in task delivery	62	0.561	13th
13	Optimise site layout and logistics - minimise material handling and transportation time	62	0.561	13th
14	Positive work environment - for effective communication and teamwork	62	0.555	16th
15	Transparency and ethical practices - they combat corruption and bribery.	62	0.522	17th
16	Strengthen regulatory frameworks – adherence with construction regulations and procedures.	62	0.619	8th
17	Enforce compliance with project standards.	62	0.610	10th

The five topmost ranked dimensions of employee productivity influenced by skill acquisition, as shown in Table V, emphasise the central role of technical competence in the construction industry. Enhanced proficiency (RSI = 0.713, ranked 1st) emerged as the most critical factor, indicating that skill acquisition is primarily valued for its ability to reduce and minimise errors during task execution. Likewise, increased efficiency (RSI = 0.700, ranked 2nd) and improved quality (RSI = 0.700, ranked 2nd) both highlight that skills enable employees to perform tasks quickly, accurately, and with consistent delivery of quality outputs. Together, these three factors underscore that proficiency, efficiency, and quality form the core productivity outcomes of skill development.

The other dimensions in the top five include engendering competitiveness (RSI = 0.639, ranked 4th), which shows that skills contribute to creating healthy competition among the workforce, and reduced downtime (RSI = 0.632, ranked 5th), alongside efficient equipment usage (RSI = 0.632, ranked 5th). These suggest that skill acquisition supports operational effectiveness by minimising delays and ensuring optimal equipment utilisation.

TABLE V
TOP FIVE (5) DIMENSIONS OF PRODUCTIVITY INFLUENCED SKILL ACQUISITION

Topmost ranked factors	**RSI**	**Rank**
Enhanced proficiency – reduce and minimise errors.	0.713	**1ST**
Increased efficiency - perform tasks quickly and accurately.	0.700	2nd
Improved quality - equipped for the delivery of quality goods and services.	0.700	2nd
Engender competitiveness – healthy competition among the workforce	0.639	4th
Reduced downtime - troubleshoot problems, perform quick maintenance, and minimise downtime.	0.632	5th
Efficient equipment usage - maximising equipment utilisation.	0.632	5th

VII. Discussion of Results

Findings of the influence of skill acquisition on employee productivity reveals the following dimensions impacted primarily; Enhanced proficiency – reduce and minimise errors; Increased efficiency - perform tasks quickly and accurately; Improved quality - equipped for delivery of quality goods and services; Engender competitiveness – healthy competition among workforce; Reduced downtime - troubleshoot problems, quick maintenance, minimising downtime; Efficient equipment usage - maximising equipment utilisation (the last two enjoyed same ranking of 5th).

Previous studies overlooked the dimensions of employee productivity impacted by skill, but instead concentrated on training and development, though sparingly emphasising skill acquisition. The close was the study by Okwuchukwu *et al.* [40] that investigated the link between human development and labour productivity. The study, however, regarded skill acquisition as an essential ingredient of workforce development that determines productivity eventually**,** without delving into those areas revealed by the current survey. A recent study by Adamu *et al.* [41] aligned with the conclusion of Kaur [42] that found training and development to yield a significant impact on employee productivity, as it closes the skill gap by helping to hone employees' skills and knowledge, among others. Additionally, just like the current research, as evident from its outcomes, the previous study recognised skills acquisition, among others, as a determinant of employee productivity.

Corroborating the earliest discussed theories, resource dependency theory, on the one hand, emphasised the need for a CPBO whose operation demands labour-intensive activities to strategise ways of ameliorating the challenges of acquisition of relevant skills by their employees for improved project delivery. On the other hand, the capability approach theory emphasised the recognition of the worth of each employee and their innate capacity, which the CPBOs could leverage for empowerment with appropriate skills that will enable positive contribution to the eventual accomplishment of the goal - project delivery. Recognising that employees with relevant skills and expertise deliver on the task successfully and increase productivity, CPBOs should adopt employee training and upskilling measures. Accomplishing this is by devising programs for updating employees with new and necessary skills, thereby creating a culture of routine training and development for operational and individual fulfilment. Research had shown the relevance of employees' skill to execution of all phases of project as level of productivity is enhanced thereby boosting CPBOs' image within the fast-changing construction world [43]. This therefore impacts productivity positively and culminates in quality project output [44]. Additionally, PMI [45] reported of substantial increase in success rates delivered by CPBOs that prioritise employees' upskilling through devotion of resources; both soft and digital skills inclusive as asserted by McKinsey [46].

Furthermore, the survey has contributed to the existing body of knowledge on the discourse of employee/labour/worker productivity by examining its actual dimensions, being influenced by skill acquisition and as a significant influencer.

The dimensions of employee productivity influenced by skill acquisition have cumulative spillover effects on the success of construction project delivery in Bayelsa state, as revealed by the study, and even in Nigeria. Therefore, the anticipated awareness created on the connection between employee productivity and construction project delivery in the study area shall require distinct investigation by future research.

VIII. CONCLUSION AND RECOMMENDATION

The study concludes that skill acquisition significantly enhances employee productivity within the construction industry for enhanced project delivery. Based on the study's findings, the most critical productivity dimensions influenced by acquisition of relevant skills are enhanced proficiency (reduce and minimise errors); increased efficiency (perform tasks quickly and accurately) and improved quality (equipped for the delivery of quality goods and services). These findings underscore that skill acquisition is primarily valued for its capacity to reduce errors, enable faster and more accurate task execution, and ensure consistent delivery of quality outputs. As established in the study, other important influences include engender competitiveness (healthy competition among the workforce); reduced downtime (troubleshoot problems, perform quick maintenance, and minimise downtime); and efficient equipment utilisation (maximising equipment utilisation.), further strengthening operational performance.

Conversely, dimensions such as job satisfaction, motivation, ethical practices, and work environment were ranked lower, suggesting that while they remain important to organisational outcomes, respondents perceive them as less directly influenced by skill acquisition compared to technical and task-related outcomes. Overall, the results emphasise that the construction industry stakeholders view technical competence, proficiency, and efficiency as the foremost drivers of productivity through skill acquisition for enhanced project delivery in the study area.

Therefore, the study recommends prioritising skill acquisition that enhances proficiency, increases efficiency, and improves quality in construction firms to enhance project delivery. While complimentary training initiatives that will also focus on significantly influencing these dimensions of productivity thereby enabling employees to perform tasks quickly, accurately, and with consistent standards should be designed and adopted.

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