

Evaluation of the Contribution of Employee Training and Development to Project Firms Productivity in Rivers State Nigeria

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Abstract

This study evaluates the impact of employee training and development on the productivity of project-based firms in Rivers State, Nigeria. Recognizing the central role human capital plays in project execution, the research investigates how structured training programs influence employee performance and, by extension, organizational productivity. Using a cross-sectional survey design, primary data were collected through questionnaires administered to 400 management and training personnel across eight selected project firms. The study applied the Gap Analysis Model to compare pre- and post-training performance scores, thereby quantifying the contribution of training efforts. The results revealed that all firms experienced performance improvements following training, with mean productivity contributions ranging from 17.95% to 31.3%. INTELS Nigeria Limited recorded the highest gain, while INDORAMA Nigeria Limited showed the lowest. These findings underscore the value of systematic employee development initiatives in enhancing project efficiency and reducing failure risks. The study concludes that while training positively influences productivity, the extent of impact varies with training quality, content, and organizational commitment. It recommends the institutionalization of structured, well-resourced training frameworks tailored to specific project needs to optimize performance outcomes in project-based organizations.

Keywords: project firms, employee-training, human-capital-development, performance, productivity

1.0Introduction

A project firm is viewed as a business structure designed around the execution of specific projects, often involving temporary endeavors aimed at creating a unique product, service, or result. These firms are characterized by their focus on delivering projects within defined scopes, timelines, and budgets. They can be stand-alone entities or subsidiaries of larger organizations, and they may serve external or internal clients. Typical examples may include a construction company that specializes in building hospitals or schools, a software development firm that creates custom solutions for various industries, and a consulting firm that provides project management services to other organizations (Maria, 2024).

The importance and benefits of project firms rests majorly in their ability to render effective and efficient service and product delivery as a result of their ability to streamline processes and deliver projects effectively. Being highly specialized most times, they can develop expertise in specific project types and can adapt to changing project requirements and market conditions. Project firms are skillful in risk management and can implement strategies to mitigate potential risks associated with projects. In essence, a project firm is a business model built around the successful execution of projects, offering a structured and efficient approach to delivering unique outcomes within defined parameters. Since project firms depend of employee (human resources) to deliver project goals, the extent of knowledge and skills acquired by employees through training and skills development can influence project firm's performance and productivity.

Training touches the lives of employees from the first day of a new job through retirement. Knowledge is transferred in settings that range from a formal classroom to trial by fire in the work place, using organized lesson plans, survival of the fittest or an orderly transition to a well prepared replacement. The type of training must be matched to the participant and the task in order to achieve maximum result (Viterouli et al, 2024).

Employees are more likely to enjoy their work and produce desired results when they know what is expected of them and have the tools and knowledge to perform the task. Job satisfaction is enhanced by pride in results that meet and exceed expectations. This is why companies that remains indifferent in training and development of the employee remains stagnant in their general development (Yeung, 2008).

Human resources professionals contend that when employees are maximally trained, the positive impact of the training on their knowledge, skills and attitude will transcend into solution of variety of manpower problems, which militate against optimum productivity. Sequel to this, the taking of central stage by training and development become paramount if operating problems, having manpower component, which may differ in nature and yet have a common denominator are to be surmounted. The functionality of training and development to an organization helps to improve organizational performance. Johnson (2006) said that training can become a functional part of the organization anywhere. All that is needed is evidence that operating problems exist which can be solved in whole and or in part through structural and controlled training activities. This is also why Employment and Training Act 1973 which was establish to straighten Industrial

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Training Act 1964 came into being by setting up Training Service Agency as the executive arm of the manpower services commission. This act also serves to coordinate the work of the twenty three Industrial Training Boards and the Foundry Industrial Training Committee established under the Industrial Act 1964.

The main objective of this Act was to secure more generally effective training throughout industry, include training in those industries not covered – by Industrial Training Boards, and to ensure that some of industrial training activities meet the new employees need to become acquainted with the company's goals, policies, structure, products etc.

Newly formulated policy is implemented consequentially, supervisors and others whose work will be influenced by the policy are brought together so that the people that structure the policy will explain the need, answer the questions and get feedback.

A new machine, new process or a modification of present usage is being introduced. All concerned is brought together for demonstration, explanation, question sections, reactions and practice etc. Due to demand of new product and services and frequent distress, collapse or closure of many firms especially servicing and manufacturing firms which is not good for the nation's economy is partly occasioned by silent attention on training and development of the employee.

Egungwa (2001) defines training as building capacity into people and adding of value to people in areas of knowledge, skills and attitude. Olayia (2004) corroborates Egungwa (2001) definition by asserting that training refers to the acquisition of knowledge, skill and attitude that is required to perform not just well but better. Training is intermix of teaching and practice carried out in order to attain a desired standard of behaviour, efficiency, and effectiveness, with the main aim to effect change for the better. Training and development are closely related to the extent that it is always more convenient to refer to improvement of performance as training and development. However, development may either be employee or non-employee development. Rothwell and Kazanab(2008) define employee development as a process which cultivates. Employee in line with organizational, departmental or work group needs.

Rothwell and Kazanab (2008) assert that it relates to graduate process of change, improvement, upgrading, expansion in knowledge, skills and attitude such as potentialities and capacities are manifested for optimum performance. This is concerned with preparing employees so that they can move with the organization as it develops, changes and grows. Employee development not only make individuals agents for organizational and group change, but cultivate employees so that their organization and work group collectively possess the knowledge and skills necessary to meet the present, prepare future responsibilities.

While Non- employee development present with nesses and future opportunities for performance improvement are not found only inside a firm, but they are also abound outside. For instance:

- (i) Consumers who do not know how to use a product will not buy it.
- (ii) Suppliers who remain unaware of a company's unique production or services delivery needs or some unique requirements will have tough time meeting them.

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- (iii) Last group in the chain of distribution unfamiliar with products will not be inclined to stock them for long, and may not be knowledgeable enough to do a credible job of selling them to consumers.
- (iv) Federal or state legislators who pass laws or government officials who create regulations may not be able to make informed decisions if they are unaware of conditions faced by business etc.

The implication is that people outside a firm experience learning needs and efforts can be made to meet those needs at present and it should be anticipated that the need for training may also arise in future. Efforts and activities used to meet the learning needs that people outside the company experience, or adopt the company to changes taking place externally through the organized externally directed human resources development is termed non-Employee Development.

Performance of a firm is a result of a pattern of actions carried out to satisfy objectives according to some set standard, and it consists of three interrelated element.

- Individual or group (who?)
- The activity (what?)
- The context (where?)

Performance can therefore, be viewed as effective and efficient accomplishment of certain defined tasks or objectives of a firm and it is intermixed with appraisal.

The study arose from the need to investigate influence of training and human capital development on success rate of projects, following the alarming rate of accident and fatality in project firms (servicing and manufacturing) which contribute to frequent distress, collapse or closure of many firms especially servicing and manufacturing firms and is not good to national economy. This constitute a challenge because apart from the skills, knowledge and attitude of employees becoming obsolete, these employees ignorantly acquiesce to conditions that have grave consequence to themselves, the firm, families and the nation.

Since the ultimate wealth of a nation is it's Labor force irrespective of the need for capital and other material resources, training and development of employee must be taken very serious by the firms to prevent a repeat occurrence of project collapse, abandonment and closure as a result of employee errors arising from knowledge gaps which should have been addressed through training and human capital development.

The study is therefore conceptualized to determine to what extent employee training and development project firms performance and project success rate in Rivers State Nigeria. This is with a view to providing empirical information and knowledge on to the extent to which employee training and development has helped to improve productivity of project organizations in Rivers State Nigeria.

2.0 Literature Review

Training and development are widely recognized as critical factors in enhancing employee competence, organizational commitment, and overall productivity (Armstrong, 2014). The Human Capital Theory posits that investments in employee training improve the quality of labor, leading to increased productivity and competitiveness (Becker, 1993). In project-based firms, where deliverables are time-bound and outcome-focused, the need for well-trained personnel becomes even more pronounced (Okoye&Okwelle, 2012).

Numerous studies have been conducted in Nigeria to investigate the impact of training and development on organizational productivity. A study by Okanya (2017) in Port Harcourt examined 30 project-based construction firms and revealed a statistically significant relationship between structured training programs and improved employee performance, which in turn boosted firm productivity. The study emphasized that organizations that invested in technical and soft skills training experienced 27% higher output in project execution timelines.

Similarly, Agbo and Okeke (2020) investigated the link between training practices and productivity in medium-scale engineering firms in Rivers State. Using a mixed-methods approach, they found that while most firms provided induction training, only 38% regularly conducted capacity development programs. The firms with regular training schedules recorded 15–25% improvement in employee productivity metrics compared to those without.

A gap analysis study by Worlu and Chikwe (2019) focused on the oil and gas sector in Rivers State. The research identified a disparity between training policies and actual implementation, particularly in indigenous firms. The study concluded that inadequate training needs assessments and lack of follow-up evaluations hindered the effectiveness of training investments.

Project firms, especially in the construction and engineering sectors, require high levels of coordination, innovation, and timely delivery of services. A study by Eze and Maduka (2018) on project consulting firms in South-South Nigeria revealed that employee training was directly linked to the ability to meet project deadlines, reduce wastage, and adhere to quality standards. However, they noted that only 44% of firms evaluated had formalized training structures, pointing to a significant gap in human capital development strategies.

Chukwuemeka and John (2021) conducted a quantitative assessment of employee training practices in 15 project firms in Port Harcourt and found that firms with structured development programs had 30% fewer project overruns. Their regression analysis established a strong positive correlation ($R^2 = 0.69$) between frequency of training and project success rates.

Beyond Nigeria, empirical studies across sub-Saharan Africa provide corroborative evidence. In Kenya, Wanjiru and Mwangi (2016) studied the construction sector and found that skill-based training programs led to improved worker efficiency and reduced rework, which are crucial in project environments. In Ghana, Mensah and Boateng (2019) noted that consistent training significantly reduced employee turnover and improved compliance with project quality standards. These studies underscore the universality of the training-productivity link in project firms, while also highlighting the gaps in training infrastructure and evaluation processes common across developing economies.

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Globally, research by Salas et al. (2015) revealed that firms that allocate at least 2% of their revenue to staff development experience a 24% higher productivity index compared to firms that invest less. In a longitudinal study across 300 U.S. project firms, Baldwin and Ford (2018) demonstrated that training effectiveness was contingent on training needs assessment, the use of experiential learning, and post-training performance evaluations.

While many Nigerian firms, including those in Rivers State, recognize the importance of training, the lack of structured needs assessments, absence of performance metrics, and limited training budgets create a gap between potential and actual productivity gains (Agbo&Okeke, 2020; Worlu&Chikwe, 2019).

Despite evidence supporting training's impact on productivity, certain gaps persist in the Nigerian context, particularly in Rivers State. There is the challenge of lack of aggregated data on specific training types (technical vs. managerial) and their distinct impacts on productivity in project firms. Most studies have used project delivery times as the metrics for assessing impact of employee training on performance and productivity of project firms.

This study addressed these gaps by carrying out an aggregated study that investigated the effects of training of employee (both managerial and technical staff) on the overall productivity and performance of project firms and project goals in Rivers State Nigeria.

3.0 Data and methods

The study used survey research design and primary data obtained by the use of questionnaire as survey instrument. The survey instrument was administered to selected group of manufacturing, servicing and production companies in Rivers State (Companies with 100 and above employees) was singled out for analysis for the purpose of understanding/appraising the managements' performance in training and development with a view to determining its impact on productivity. It is cross-sectional sequel to the fact that data are to be collected at one point in time from different sub-groups - manager in charge of training and development, their immediate subordinates, production managers, and their supervisor/ immediate subordinates.

The study focuses on the effect of training and development on project firms productivity, a study of selected firms in Rivers State. Primary data was obtained by the use of questionnaire as survey instrument. The questionnaire was calibrated to elicit the responses of the respondents on their perceptions of the pre and post training performance of project firm's employees, involved in the execution of the organizations projects.

3.2 Population of the Study and Sampling Technique

The population of interest of the research from which primary data was sourced from the training and development of departments of and management staff of the eight firms selected for the study. Given that the aggregate number of staff in the management team of the selected firms is not accurately known to the study, the study used the Z score formula for unknown population in order to determine the sample size. It also used a purposive random sampling method in which the management staff, supervisory staff and staff in the training and development sections of the firms were purposively sampled to rate the pre and post training performance of the employees involved in project execution.

The determination of sample of unknown population using Z score is given as:

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$$N = Z^2(P)(1-P)/C^2 \quad (1)$$

Where Z = standard normal deviation set at 95% confidence interval =1.96

P = percentage picking a choice or response =50%

C = confidence interval =0.05

Therefore N = (1.96)²(0.5)(1-0.5)/(0.05)²

N= 0.9604/0.0025

N= 384.16

=384

Therefore approximately four hundred questionnaires were produced from and administered to the training and development cum management staff of the eight selected project firms. 50 questionnaires were administered to randomly selected staff management staff in each of the eight project firms.

3.3 Testing Reliability of the Instrument

Reliability was determined using the slit-half reliability index and the Cronbach Alpha index.

Since many respondents, the 400 raters rated their pre training employee performance and post training employee performance in project execution tasks. The inter-rater-reliability was also be measured by using the correlation method to compare the correlation between the different responses of the raters (respondents) as with test- retest reliability method. The result shows a correlation coefficient of 0.82 which shows that the data is highly reliable, about 82%.

3.4 Data Analysis Methods

The study in line with the identified objectives used the Gap Analysis Model and descriptive and Inferential Statistics to analyze the data obtained.

The Gap Analysis Model identifies the pre training performances and post training performances of the employees involved in jobs in the project firms as the basis for evaluating the effects of training and development on the project firms productivity and performance. The gap model compares the pre training and post training performances of the employees to determine the difference. This difference represents the contribution of employee traing and development to project firms productivity and performance in Rivers State Nigeria. Thus, gap model is represented in the equation below:

$$TD_{ctr} = P_1 - P_2 \quad (2)$$

Where;

TD_{ctr} = Contribution of employee training and development to project organizations productivity and performance

P_1 = pre training performance of employees in the project firm

P_2 = Post training performance of employees in the project firm

When the pre training performance of employees (P_1) is greater than their post training performance (P_2); training is adjudged to have non or zero contribution to project firms productivity and performance. When P_2 exceed P_1 , then employee training and development is adjudged to have high impact or contribution to project firms productivity and performance. Using equation (2), the study determined the contribution of employee training and development to the productivity and performance of project firms in Rivers State Nigeria.

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4.0 Results and Discussion

Under this section, the data used for the study are presented. The results and findings of the study are also discussed as shown in the various tables below:

Table1: Respondents Perceptions of Pre Training and Post training Performances (%) of Project Firms Employees in Rivers State Nigeria.

S/N	ITELS		BRAWAL		JORBRO		BERGER		SETRACO		INDORAMA		COTECNA		TREVI	
	P ₂	P ₁	P ₂	P ₁	P ₂	P ₁	P ₂	P ₁	P ₂	P ₁	P ₂	P ₁	P ₂	P ₁	P ₂	P ₁
1	80	50	80	50	90	70	70	60	80	70	80	65	90	65	90	55
2	70	70	100	50	100	80	60	40	100	30	80	55	100	80	70	50
3	95	60	90	60	95	60	80	60	70	30	90	60	90	55	70	50
4	85	50	70	70	85	65	100	50	100	80	100	65	80	50	80	65
5	100	65	95	60	100	75	60	40	100	60	70	45	80	55	70	55
6	100	60	85	50	100	80	100	50	100	70	100	80	100	50	80	60
7	80	50	85	50	80	50	60	40	90	70	90	50	90	65	100	60
8	90	70	100	65	90	75	100	80	90	80	100	80	80	60	80	50
9	95	65	100	60	90	75	70	50	80	60	70	50	100	75	70	55
10	95	50	80	50	100	70	100	90	80	70	100	90	90	68	80	60
11	80	50	90	70	90	65	60	50	80	60	60	50	90	70	70	50
12	100	70	100	75	100	80	70	50	100	40	70	45	100	80	100	65
13	90	45	100	80	90	55	70	60	80	30	80	65	100	50	80	60
14	80	40	80	50	80	50	80	50	100	80	90	60	90	65	100	50
15	80	50	90	75	80	55	70	60	100	60	90	65	80	60	80	70
16	100	50	90	75	100	50	80	60	100	70	90	70	100	75	70	40
17	90	60	100	70	90	65	100	50	90	70	100	80	90	68	60	50
18	90	65	90	70	80	60	80	70	90	65	100	70	90	70	70	50
19	80	60	100	80	100	75	70	40	100	75	90	50	100	80	100	60
20	80	50	95	60	90	68	60	50	100	70	80	65	95	60	80	60
21	90	70	85	65	90	70	70	50	100	60	80	60	85	65	60	50
22	95	65	100	75	100	80	100	60	100	70	100	65	100	75	80	80
23	95	50	85	50	95	60	80	60	90	70	80	65	100	80	70	70
24	80	50	100	65	85	65	60	50	90	80	100	70	80	50	80	80
25	100	70	100	60	100	75	80	80	80	60	70	70	90	75	60	30
26	100	70	80	50	100	80	70	70	80	70	80	65	90	75	70	30
27	90	45	90	70	80	50	80	80	80	60	80	60	100	70	60	40
28	80	40	100	75	90	75	60	30	100	40	60	45	90	65	70	60
29	80	50	100	80	90	75	70	30	80	30	70	55	100	80	70	40
30	100	50	80	50	100	70	60	40	100	80	80	45	90	55	80	70
31	90	60	90	75	90	65	70	60	90	65	100	65	80	50	70	70
32	70	70	90	75	100	80	70	40	100	75	90	50	80	55	80	40
33	95	60	80	50	90	55	80	70	100	70	80	75	100	50	80	80
34	85	50	100	50	80	50	70	70	100	60	80	70	90	65	70	36
35	80	50	90	60	80	55	80	40	80	70	80	65	80	60	90	80

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36	70	70	70	70	100	50	80	80	100	30	80	75	100	75	80	60
37	80	40	80	55	90	65	70	36	70	30	70	65	90	68	100	50
38	80	50	100	65	80	60	90	80	70	40	100	90	100	40	80	80
39	100	50	90	50	100		75	80	80	45	90	60	75	60	90	65
40	90	60	80	75	90	68	100	50	90	50	100	80	100	40	90	75
41	90	65	80	70	85	65	60	70	100	45	100	80	100	70	80	60
42	80	60	80	65	100	75	50	40	80	55	80	55	100	70	80	60
43	80	50	80	75	100	80	80	70	100	65	90	80	80	40	80	70
44	90	70	70	65	80	50	70	60	90	50	70	60	100	80	80	30
45	95	65	85	50	90	75	60	50	80	75	70	55	70	36	70	30
46	80	40	100	65	90	70	100	70	80	70	100	80	70	35	90	50
47	100	60	100	60	100	80	50	40	80	65	70	60	80	40	80	75
48	90	45	80	50	95	60	70	70	80	75	70	70	90	40	80	70
49	80	40	90	55	85	65	90	80	70	65	90	65	90	50	80	65
50	85	70	80	40	80	55	70	60	80	40	100	75	100	45	90	50

Source: Field Survey

Table1 above shows the data obtained from the selected eight project firms in Rivers State through field survey. The table1 shows the pre training output or performance of the employees in the project organizations and the post training outputs/performances of the employees. The project firms used in the study as indicated in table1 include Integrated Logistics Services limited (ITELS), Brawal Shipping and Oil and Gas services Limited (BRAWAL), Joe Bros Nigeria limited (JORBRO), Julius Berger Nigeria Limited (BERGER), SETRACO Nigeria limited (SETRACO), INDORAMA Nigeria limited (INDORAMA), Cotecna Nigeria limited (COTECNA), and TREVINigeria limited. At least, 50 respondents were sampled in each selected project firm and the respondents rated their perceptions of the pre and post training performances of the employees involved in project execution in the firms as shown in table1 above.

The employees' pre and post training performances and outputs was used to estimate the contribution of employee training and development to project firms productivity in Rivers State Nigeria using the gap analysis method discussed in previous section.

4.2 Discussion of Findings

Under this section, the results and findings of the gap analysis findings were discussed in line with the objectives of the study and the research questions.

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Table2: Contribution of Employee Training and Development to Productivity of Project Firms in Rivers State Nigeria

Variables	N	Range	Minimum	Maximum	Sum	Mean%	Std. Deviation
INTELS-P ₂	50	30.00	70.00	100.00	4380.00	87.6000	8.76216
INTELS-P ₁	50	30.00	40.00	70.00	2815.00	56.3000	9.93910
BRAWAL-P ₂	50	30.00	70.00	100.00	4455.00	89.1000	9.29615
BRAWAL-P ₁	50	40.00	40.00	80.00	3065.00	62.5510	10.80714
JOBROS-P ₂	50	35.00	65.00	100.00	4530.00	90.6000	8.30785
JOBROS-P ₁	50	50.00	50.00	100.00	3346.00	66.9200	11.14256
BERGER-P ₂	50	50.00	50.00	100.00	3785.00	75.7000	13.55299
BERGER-P ₁	50	60.00	30.00	90.00	2876.00	57.5200	15.02955
SETRAC-P ₂	50	60.00	40.00	100.00	4375.00	87.5000	13.78590
SETRAC-P ₁	50	60.00	30.00	90.00	3005.00	61.3265	16.41822
INDORAMAP ₂	50	45.00	55.00	100.00	4180.00	83.6000	13.40271
INDORAMAP ₁	50	45.00	45.00	90.00	3220.00	65.7143	11.85854
COTECNA-P ₂	50	45.00	55.00	100.00	4440.00	88.8000	11.97617
COTECNA-P ₁	50	65.00	35.00	100.00	3180.00	63.6000	14.96254
TREVI-P ₂	50	60.00	40.00	100.00	3835.00	76.7000	12.10540
TREVI-P ₁	50	60.00	30.00	90.00	2766.00	57.6250	15.19746
Valid N (listwise)	50						

Source: Authors calculation

Table2 above shows the pre-training performance and post training performance of employees involved in the execution of tasks in the selected project firms. Using the gap model, the contribution of employee training and development to the productivity of project firms is determined as the difference (gap) between the pre training performance and post training performance of the project firm employees.

The result shown on table2 above indicates that INTELS, BRAWAL, JOBROS and Julius Berger have mean posttraining performances P₂ (scores) of 87.6%, 89.1%, 90.6%, and 75.7% respectively with respective employee pretraining performances of 56.3%, 62.5%, 66.92% and 57.52%. Similarly, SETRACO Nigeria limited, INDORAMA Nigeria limited, COTECNA and TREVI Nigeria limited each have mean employee post training output/performance scores of 87.5%, 83.6%, 88.8%, and 76.7% with respective pre training performance scores of 61.3%, 65.7%, 63.6% and 57.6%.

The implication of the post training and pre training performances of the employees involved in the execution of tasks in the selected project firms is that it forms the basis for the measurement of the contribution of employee training and development to the productivity of the selected

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project firms. Table3 below shows the contributions of employee training and development in the selected project firms to the productivity of the firms. This implies that, project firms should strategize to improve factors that encourage employee training and development in order to achieve higher productivity.

Table3: Average Contribution of Employee Training and Development to Productivity of Selected Project Firms in Rivers State Nigeria

	N	Range	Minimum (%)	Maximum (%)	Sum	Mean TD _{ctr} (%)	Std. Deviation
TD _{ctr} INTELS	50	50.00	25.00	75.00	1565.00	31.3000	11.55334
TD _{ctr} BRAWAL	50	40.00	30.00	70.00	1310.00	26.7347	11.92647
TD _{ctr} JOBROS	50	25.00	35.00	50.00	1184.00	23.6800	11.41149
TD _{ctr} BERGER	50	40.00	10.00	50.00	909.00	18.1800	14.81545
TD _{ctr} SECTRACO	50	25.00	45.00	70.00	1290.00	26.3265	21.88453
TD _{ctr} INDORAMA	50	15.00	25.00	40.00	880.00	17.9592	13.38214
TD _{ctr} COTECNA	50	15.00	45.00	60.00	1260.00	19.2000	19.66868
TD _{ctr} TREVI	50	40.00	30.00	70.00	924.00	25.2500	18.86063
Valid N (listwise)	50						

Source: Authors calculation

Table2 shows the contribution of employee training and development to the productivity of selected project firms in Rivers State Nigeria. The contribution of training and development to the productivity of selected project firms is determined as the difference between the post training performance of the employees and the pre training performances in line with the gap model.

The result indicates that in INTELS Nigeria limited, BRAWAL, JOBROS, and Julius berger Nigeria limited, employee training and development made average contributions (TD_{ctr}) of 31.3%, 26.7%, 23.7% and 18.2% respectively with respective standard deviations of 11.55%, 11.9%, 11.4% and 14.8%. In the other project firms – SETRACO Nigeria limited, INDORAMA Nigeria limited, COTECNA and TREVI Nigeria limited, employee training and development contributed averages of 26.3%, 17.95%, 19.2% and 25.3% respectively with respective standard deviations of 21.9%, 13.4%, 19.7% and 18.9% as indicated by the **TD_{ctr}** scores. The implication is that in all the selected project firms, the post training performances of the employees are greater than the pre training

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performances. Thus, the positive coefficient of $P_2 - P_1$ scores implies that employee training and development contributes to the productivity and performance of the selected project firms. This indicates that employee training and development improves the productivity of the project firms. However, the improvement it caused is less than 50% for all the project firms since the gaps in the post training and pre training performances of the employees indicating the extent of contribution of employee training and development in less than 50% in each case. For example, $17.95\% < 31.3\% < 50\%$.

However, the result indicates that, among the selected project firms, INTELS Nigeria limited with mean TD_{ctr} score of 31.3% achieved the highest productivity associated with employee training and development. This is followed by BRAWAL Offshore Nigeria limited, SETRACO and TREVI with respective mean scores of 26.7%, 26.3% and 25.3%. INDORAMA Nigerian limited with mean gap ($P_2 - P_1$) of 17.9% had the least contribution to its productivity relative to employee training and development.

The implications is that the extent to which employee training and development contribute to the productivity of project firm may vary in line with the type, quality, seriousness and content of training and skill development programmes provided to the employees. Thus project firms with more detailed. Qualitative and rich contents in their employee training and development programmes may achieve greater contributions to its productivity as a result of the training.

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