The Effect of Training on Product Quality in Selected Beverage Companies in Southeast Nigeria

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ABSTRACT

The impact of training on product quality in some beverage firms in Southeast Nigeria was studied. The study was conducted among Nigerian Breweries Plc, Seven-Up Bottling Company Plc and Coca-Cola Nigeria Limited. The study was conducted with a target population of 1500 managers, supervisors and operational staff while a sample of 500 was obtained through a multi-stage sampling process. Descriptive survey research design was used. 500 questionnaires were sent out of which 488 were usable for analysis. Descriptive statistics and simple linear regression were used to analyze the data. The results showed that training was perceived relevant to the work functions because of the improvement in technical competence, the reduction of production errors, and the improvement of product quality. The co-efficient of correlation ($R = 0.689$) and coefficient of determination ($R^2 = 0.475$) for the regression analysis revealed that 47.5% of the variance in product quality was explained by training with a significant positive relationship ($B = 0.667$, $t = 14.29$, $p = 0.000$). The study finds that on-going role-specific training has a significant effect in enhancing product quality through reinforcing employee. It suggests that companies in the beverage industry establish a competency-based training process to maintain product quality and improve organizational performance.

Keywords: Training, Product Quality, Human Resource Management, Beverage Companies, Organizational Performance.

INTRODUCTION

Investing in employee training is crucial for companies aiming to optimize their operations and deliver top-tier products. Continuous training in the manufacturing industry, where technical skills and high standards for quality are essential for production processes, helps employees acquire the knowledge and skills necessary for their work. Consequently, more and more organizations see training as strategic investment for better employee performance and organizational competitiveness.

Product quality is still a vital indicator in the beverage industry. Consumers need and demand products that are always safe and reliable, of good taste and packaged in a safe and sanitary manner. In the case of failure to reach these standards, it may lead to customer dissatisfaction, product recalls, production cost increases, and loss of market share. As a result, beverage companies are still investing in employees to maintain their production processes in line with quality assurance standards.

The Nigerian Beverage industry is a very competitive and dynamic business with technological advances, high production costs, shifting consumer tastes and preferences, and stiff regulatory demands. These challenges necessitate the need to build an appropriately skilled workforce that can help reduce production errors and ensure product quality. Thus, training becomes very important to help improve the technical skills of employees, help support quality improvement programs in manufacturing companies. While the link between HRM practices and organizational performance have been discussed before, little attention has been paid to the effect of HRM training on product quality in beverage manufacturing organizations in Southeast Nigeria. The effect of training on product quality in selected beverage companies in Southeast Nigeria is therefore examined, based on the need to provide empirical evidences on the contribution of employee training to improved product quality.

Research Objective

The general objective of this study is to examine the effect of training on product quality in selected beverage companies in Southeast Nigeria. The specific objective of this study is to determine the extent to which training influence product quality in selected beverage companies in Southeast Nigeria.

Research Question

To what extent does training influence product quality in selected beverage companies in Southeast Nigeria?

Research Hypothesis

Training significantly improves product quality in selected beverage companies in Southeast Nigeria.

LITERATURE REVIEW

Employee Training as a Strategic Human Resource Practice

It is no secret that employee training is regarded as one of the most critical HRM practices that enhances the efficiency of an organization's workforce. According to Armstrong (2020), training is a systematic process designed to equip employees with the knowledge, skills and abilities necessary to do their duties and tasks effectively. Similarly, Dessler (2021) argues that training is vital for human capital development as it provides employees with the skills required to boost productivity, embrace technological advancements, and contribute to better business results. These views highlight the importance of training for a workforce that can meet organizational objectives.

In the manufacturing industry, employee training goes beyond orientation programs to encompass technical skills, machine operation, quality assurance protocols, occupational safety measures, and ongoing professional development. Noe et al. (2020) suggest that employees' competence can be enhanced by continuous learning, their tasks can be carried out with a higher efficiency, and their competence can be adjusted to the changes in the production technologies. Especially in the beverages industry where staff is required to adhere to stringent production standards whilst ensuring consistency and efficiency of production.

The strategic importance of employee training is clearly illustrated by how the top beverage companies do it. Nigerian Breweries Plc (2020) claimed that they maintained investment in employee training and leadership development in order to increase productivity, efficiency and safety in the workplace. Coca-Cola HBC (2020) also noted a large number of training programs aimed to build technical, managerial and safety capabilities of employees. As people increasingly understand the need to invest in employee growth, these investments are reflecting that.

Product Quality as a Critical Dimension of Organisational Performance

One of the most basic measures of organizational performance is product quality, especially in the manufacturing sector where customer satisfaction and competitive advantage really hinge on the consistency and reliability of products. High quality products are defined as meeting or exceeding the expectations of the customer, giving value for the money, being reliable, durable, safe and conforming to specifications. Product quality also means conformance to regulatory requirements, uniformity of taste and composition, and packaging in the beverage business. According to Armstrong (2020), the best performance for organizations is obtained when human resource policies are linked to operations and worker ability. Similarly, Dessler (2020) argues that qualified workers also play an important role in improving the quality of goods by correctly completing the production process and following the quality standards set by the organization, and by using quality resources properly. The following opinions indicate that, apart from technology and production systems, product quality is also determined by the knowledge, skills and commitment of persons involved in production activities.

In a rapidly changing market, maintaining quality in beverage manufacturing is critical for ensuring consumer trust, safeguarding brand reputation, and staying competitive. As a result, companies keep investing in schemes to enhance employee competences and boost ongoing quality improvement in production schemes.

Employee Training and Product Quality: Empirical and Conceptual Perspectives

It is known that employee training and product quality are closely related, and this is supported by many studies in human resource management literature. According to Armstrong (2020), successful training programs enhance worker skills and help them meet organizational quality requirements. Likewise, Noe et al. (2020) note that ongoing employee training can increase the ability of employees to perform their jobs, decrease production mistakes, and increase the capacity for employees to take on challenges in their workplace. All these studies point towards training being a strategic tool to enhance product quality and organizational effectiveness. Egbo, Orga and Onyema (2023), studying paint manufacturing firms in South-East Nigeria, found that employee knowledge and skills had significant effects on product quality and organisational outcomes. Olatunji (2025) also found that training programmes, training design and training needs were important to employee performance and product quality in President Paints Nigeria Limited. These findings suggest that the value of training lies not only in providing employees with learning opportunities but also in ensuring that what they learn is relevant to their jobs.

This relationship is further supported by evidence from the beverage industry. Sustained investment in the training of employees, as exemplified by Nigerian Breweries Plc (2020) and Coca-Cola HBC (2020), improves production efficiency, quality assurance and operational performance. They know that a well-trained workforce can better reduce waste, defects and ensure that product quality remains high, which is evident in their dedication to continuous learning. The present study confirms these views. The majority of employees in the beverage companies felt that training was relevant to their work, and that the training increased their knowledge of the job, decreased production mistakes and increased the quality of the product. Participants also confirmed that ongoing training sessions help to improve production standards and reduce customer complaints. These results show that employee training is one of the most important human resource practices in order to fulfil and maintain product quality in the beverage manufacturing organisations.

However, the evidence is not completely consistent. A 2024 study of food and beverage manufacturing firms in Lagos State found that employee training did not significantly moderate the relationship between quality management practices and organisational performance. This finding suggests that training may have limited effects when it is not supported by effective quality-management systems and other organisational resources. The difference between these findings indicates that training does not automatically lead to better quality; its impact may depend on its relevance, design and application in the workplace.

Training and Product Quality, a Review of the Human Capital Theory

The study is guided by Human Capital Theory which posits that investment in the knowledge, skills and competencies of employees constitutes a way of enhancing productivity and organizational performance. The theory proposes that organizations will benefit in the long term if they invest in employee growth through learning and training because employees will be able to do their work more efficiently and effectively.

This theory's relevance for this study is mainly due to its explanation of the technical skills that an employee needs to learn to use production equipment, to follow the quality assurance, to reduce production defects and to keep the product standards. Human Capital Theory is an appropriate explanation for the positive relationship between employee training and product quality that was observed for the selected beverage companies because it suggests that ongoing investment in workforce development is important for enhancing organizational performance.

THEORETICAL FRAMEWORK

This study is based on the Human Capital theory by Becker (1964). The theory assumes that investing in employee education, training and skill development increases workers productivity and consequently the performance of the organization. In the Human Capital Theory, the knowledge and skills of employees are regarded as assets of an organization that can provide long term competitive advantage.

This theory is particularly relevant to the relationship between training and product quality in beverage companies. The quality of products depends, to a large extent, on employees' ability to operate equipment properly, follow production procedures, identify defects and maintain the required quality standards. When employees receive appropriate training, they are better equipped to perform these tasks, which can help reduce production errors and waste and improve the consistency of finished products. In this sense, training can strengthen employees' competence and, in turn, contribute to better production practices and improved product quality.

The findings of this study support this position. The descriptive results indicate that 62.50% of respondents agreed that training improves employees' skills, while 58.98% reported that training helps to correct production errors. The regression analysis also revealed a strong positive relationship between training and product quality ($R = 0.689$; $R^2 = 0.475$; $\beta = 0.689$; $p < 0.001$).

Despite its usefulness, Human Capital Theory has some limitations. Training does not necessarily lead to better product quality if employees do not have the equipment, resources or supervision needed to apply what they have learned. The outcome may also depend on how relevant and practical the training is to employees' actual responsibilities. In addition, employees may leave the organisation after receiving training, reducing the expected benefits of the investment. This study takes these issues into account by examining training alongside specific outcomes such as skill development, production errors, customer complaints and overall product quality.

METHODOLOGY

This study adopted a descriptive survey research design to examine the effect of training on product quality in selected beverage companies in Southeast Nigeria. The study was conducted in three selected beverage companies operating in Southeast Nigeria: Nigerian Breweries Plc, 7Up Bottling Company Plc, and Coca-Cola Nigeria Limited. The target population comprised 1,500 management, supervisory, and operational employees across the three companies. However, the study sample size used was 488. The primary data were collected using structured questionnaire complimented by semi-structured interviews with selected human resource managers, supervisors, and departmental heads. Data were analyzed using descriptive and inferential statistics. A Cronbach's Alpha value of 0.70 and above was considered acceptable for the study, as it indicates satisfactory internal consistency among the items measuring each construct. Frequencies, percentages, means, and standard deviations were used to summarize respondents' views, while simple linear regression analysis was employed to test the research hypothesis at the 0.05 level of significance.

RESULTS

The analysis of responses on training and product quality showed that employees generally perceived training programs as relevant to their work and beneficial to production activities.

Training Programs and Product Quality

Sub-Question	Response	Frequency	Percentage (%)	Mean	Standard Deviation
1. Adequate training relevant to roles	Strongly Agree	172	35.25	2.38	1.02
	Agree	197	40.36		
	Neutral	82	16.80		
	Disagree	27	5.53		
	Strongly Disagree	10	2.05		
2. Training improves employees' skills	Yes	305	62.50	1.70	0.79
	No	84	17.21		
	Not sure	71	14.55		
	Don't know	28	5.74		
	Yes	93	19.06	2.89	1.04

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3. Training programs regarded as irrelevant	No	332	68.03		
	Not sure	42	8.61		
	Don't know	21	4.30		
4. Opportunities for regular skill development	Yes	294	60.25	1.84	0.81
	No	98	20.08		
	Not sure	73	14.96		
	Don't know	23	4.71		
5. Basis for selecting employees for training	Performance appraisal results	122	25.00	3.08	1.17
	Identified skill gaps	221	45.28		
	Length of service	58	11.89		
	Promotion requirements	46	9.43		
	Management discretion	30	6.15		
	Other	11	2.25		
6. Training reduces customer complaints	Yes	271	55.53	1.86	0.82
	No	102	20.90		
	Not sure	82	16.80		
	Don't know	33	6.76		
7. Training helps correct production errors	Yes	288	58.98	1.79	0.76
	No	94	19.26		
	Not sure	72	14.75		
	Don't know	34	6.97		
8. Overall product quality rating	Excellent	94	19.26	2.98	1.09
	Above average	192	39.34		
	Average	141	28.88		
	Below average	45	9.22		
	Poor	16	3.28		

Source: Field survey, 2026

From the table above, respondents indicated that training enhanced their technical competence, improved their ability to perform assigned tasks, reduced production errors, and contributed to improved product quality. They also affirmed that role-specific training enabled employees to respond more effectively to operational challenges and maintain production standards.

Test of Hypothesis

Hypothesis

Training programs significantly improve product quality in Coca-Cola, Seven-Up, and Nigerian Breweries.

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	0.689	0.475	0.471	0.705

ANOVA Table

Simple linear regression analysis was used to determine the effect of training programs on product quality.

The regression results revealed a strong positive relationship between training programs and product quality ($R = 0.689$). The coefficient of determination ($R^2 = 0.475$) indicates that training programs account for 47.5% of the variation in product quality among the selected beverage companies. The regression model was statistically significant (F = 204.10, p = 0.000), indicating that training programs significantly predict product quality.

Additional Analysis

The study further considered the possible influence of control variables such as age, educational level, years of experience and company. It also considered whether employee skills and motivation could explain how HR practices influence organisational performance. Differences across the three companies and employee levels were also considered to determine whether the observed relationships were consistent across groups.

Findings from Semi-Structured Interviews

The interview responses were generally in line with the questionnaire findings. Participants explained that employing people with the right skills and qualifications helped to reduce mistakes and improve production. One participant noted, “When you put the right person in the right job, it will reflect in their work.” This supports the finding that selection practices are related to production efficiency.

Training was also mentioned by several participants as an important factor in maintaining product quality. Participants explained that employees who receive regular training are better able to use production equipment, follow procedures and deal with problems when they occur. This agrees with the quantitative finding that training has a significant positive relationship with product quality.

DISCUSSION OF FINDINGS

The results of this study indicated that training programs are significant in influencing the quality of products in the identified beverage companies in Southeast Nigeria. From the descriptive analysis, it was observed that most of the respondents found the training relevant to their work roles and that the training enhanced their technical skills. They also reported that they had frequent opportunities to develop skills and that they choose participants for training mostly based on skills that were identified and on performance appraisal results. In addition, the majority of the respondents supported the fact that training helped to reduce customer complaints, to correct the production errors quickly, and helped in producing above average products. The results of this work show that training, based on structures and relevance, improves the competence of the employee to help achieve the quality production standards.

The regression analysis also confirmed the positive effect of training on product quality. The result of the analysis shows that the correlation coefficient of R = 0.689 and the coefficient of determination of R2 = 0.475, where it can be seen that 47.5% of the variation in the product quality can be explained by the training. The regression coefficient (B = 0.667) was positive and statistically significant (t = 14.29; p = 0.000) thus signifying that the improvement of training programs corresponds to the improvement of product quality.

The results agree with the empirical evidence included in the thesis. Ugbene and Ugwuanyi (2021) observed that employee training plays an important role in improving product quality in manufacturing firms. They found that technological skills, on-the-job training, and off-the-job training can improve areas like product packaging, product modification, and product innovation. Likewise, Nigerian Breweries Plc (2023) reported that sustained employee development boosts production capacity, compliance of quality standards, and problem solving ability during production process. The results also corroborate the Manufacturers Association of Nigeria (2025) that training programs dedicated to the upskilling of employees are beneficial to enhancing product uniformity and minimizing waste.

Limitations of the Study

The study covered 488 respondents from three selected beverage companies in South-East Nigeria. While the sample was adequate for the study, the findings may not apply to all beverage companies in Nigeria or to organisations in other sectors.

The study also relied on information provided by the respondents through questionnaires. Their responses may have been influenced by their personal views or experiences and may not always reflect the actual practices of their organisations. Since information on both HR practices and organisational performance was obtained from the same respondents, there is also a possibility of common method bias.

CONCLUSION

This study investigated the impact of training on product quality in some of the beverage firms of Southeast Nigeria. The results proved that the training programs have positive and statistically significant impacts on product quality. Employees felt that training was relevant to their job roles, useful for acquiring new skills and was useful in minimizing production errors and customer complaints. The regression analysis also yielded significant prediction of training on product quality, meaning that the continued investment in employee training has a significant contribution towards enhancing the production outcomes.

The study thus draws a conclusion that employee training is an important human resource practice in achieving and maintaining product quality in the beverage manufacturing companies. Increased workforce competence, product standards and overall competitiveness are likely to increase if structured, role-specific and continuous training programs are designed and implemented by organizations.

RECOMMENDATIONS

Training should be directly related to employees’ duties, particularly machine operation, quality control, safety and production procedures. Training needs should be based on identified skill gaps and performance problems.

Production schedules and training costs may make implementation difficult. These challenges can be reduced through short practical sessions, on-the-job training and mentoring without taking too many employees away from production.

Companies should also assess the value of training by comparing its cost with improvements in product quality, reduced errors, lower waste and fewer customer complaints. This will help management focus resources on training programmes that produce measurable results.

Recommendation for Future Research

Future studies should combine questionnaire surveys with direct observation of training and production activities. Observing employees during training and actual production would provide a clearer picture of how training is applied at work and how it affects product quality. This would also help compare employees’ survey responses with what happens in practice.

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