

Employee Training And Organisational Performance: A Case Of Byayuya Sugar Factory, Kaliro District, Uganda

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Abstract

This study examined the relationship between employee training and organisational performance at Byayuya Sugar Factory, Kaliro District, Uganda. Employing a descriptive correlational research design and quantitative approach, data were collected from 98 employees using structured questionnaires. Employee training was operationalised through training needs assessment, training design and content, training delivery methods, and post-training evaluation. Organisational performance was measured through employee productivity, service quality, and organisational innovation. Findings revealed that all training dimensions are positively and significantly correlated with organisational performance (r ranging from .583 to .672, $p < .001$). Multiple regression analysis indicated that training dimensions collectively account for 61.5% of the variance in organisational performance ($R^2 = .615$, $F(4,93) = 37.24$, $p < .001$). Training design and content was the strongest predictor ($\beta = .347$, $p < .001$). The study concludes that structured employee training significantly improves organisational performance and recommends that Byayuya Sugar Factory institutionalize a comprehensive training policy, conduct systematic needs assessments, and invest in post-training evaluation systems.

Keywords: Employee training, organisational performance, human resource development, Byayuya Sugar Factory, Uganda, manufacturing

1. BACKGROUND

In the contemporary global business environment characterized by rapid technological change, shifting market dynamics, and intensifying competition, the continuous development of human capital has emerged as a critical source of sustained competitive advantage (Julius, 2024). Employee training defined as any planned activity designed to improve the knowledge, skills, attitudes, and behaviours of employees in ways that enhance their performance in current and future roles (Noe, 2017) is widely regarded as one of the most powerful human resource management tools available to organisations seeking to improve productivity, quality, and innovation.

Uganda's agro-processing sector, including sugar manufacturing, plays a pivotal role in the national economy (Kazaara & Audrey, 2024). Sugar factories contribute significantly to employment, rural income generation, and foreign exchange earnings. Byayuya Sugar Factory, located in Kaliro District in eastern Uganda, is one of the smaller sugar processing facilities in Uganda's growing sugar industry (Kazaara & Audrey, 2024). Established in the early 2000s, the factory processes sugarcane grown by contracted outgrowers in Kaliro and neighbouring districts, producing sugar

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for both domestic consumption and regional export(Kazaara et al., 2024). Like many manufacturing enterprises in Uganda, Byayuya faces challenges related to workforce skills gaps, production efficiency, equipment maintenance competencies, and quality control — challenges that are frequently linked to inadequate investment in employee training (PSFU, 2020).

Human Capital Theory (Becker, 1964) provides the foundational theoretical framework for this study. The theory posits that investment in education and training increases the productive capacity of workers, thereby generating returns for both the individual and the employing organisation. In the organisational behaviour literature, Kirkpatrick's (1959) four-level model of training evaluation measuring reaction, learning, behaviour, and results — provides a useful framework for understanding how training investments translate into organisational performance outcomes(Nancy & Prudence, 2024). Additionally, the Resource-Based View (RBV) of the firm (Barney, 1991) positions trained employees as a rare, valuable, inimitable, and non-substitutable resource that provides sustainable competitive advantage(Julius & Kaazara, 2025). In the East African manufacturing context, several studies have examined the training-performance relationship with generally positive results. In Kenya, Mwangi et al. (2014) found that training investment was a significant predictor of employee productivity in manufacturing firms. In Uganda, Namutebi and Katamba (2018) conducted a study of public enterprises and found that structured training programs improved service quality and employee performance, though the study was limited to the public sector(Isaac et al., 2023). No prior empirical study has specifically examined the training-performance relationship in a sugar manufacturing context in Uganda, making this study a unique contribution to both the academic literature and industry practice(Julius & Matovu, 2025).

2.0 PROBLEM STATEMENT

Byayuya Sugar Factory has experienced persistent operational challenges including suboptimal sugar extraction rates, high equipment downtime, recurring product quality deviations, and elevated staff turnover(Kazaara & Audrey, 2024). Field observations and preliminary interviews with factory management suggest that these challenges are partly attributable to deficiencies in employee training(Christopher et al., 2022). Specifically, the factory lacks a formal training policy, training needs assessments are conducted irregularly, training programs are designed without adequate job analysis, delivery methods are predominantly lecture-based and not tailored to the technical needs of factory floor workers, and post-training evaluation is virtually non-existent(Sarah & Audrey, 2024). Despite the acknowledged importance of employee training, there is no published empirical study that has quantitatively examined the training-performance relationship specifically at Byayuya Sugar Factory(Ivan et al., 2023). The absence of such evidence limits the management's ability to make evidence-based training investment decisions and undermines the case for dedicating

budget resources to human capital development(Julius, 2024). This study therefore addresses the question: what is the relationship between employee training and organisational performance at Byayuya Sugar Factory, Kaliro District?

3.0 MAIN OBJECTIVE

The main objective of this study was to examine the relationship between employee training and organisational performance at Byayuya Sugar Factory, Kaliro District, Uganda. Specific objectives were: (i) to assess the level of employee training practices at the factory; (ii) to evaluate the level of organisational performance at the factory; (iii) to determine the relationship between employee training dimensions and organisational performance; and (iv) to establish the extent to which employee training predicts organisational performance.

4.0 LITERATURE REVIEW

4.1 Employee Training

Employee training encompasses all systematic activities aimed at improving the skills, knowledge, and attitudes of employees to enhance their current or future job performance (Armstrong, 2014). Training needs assessment (TNA) is the systematic process of identifying the gap between existing and required employee competencies and serves as the foundation for effective training program design (Goldstein & Ford, 2002). Without a rigorous TNA, training programs risk addressing symptoms rather than root causes of performance deficiencies, wasting resources and demoralising participants(Alex & Moses, 2024). Training design and content refers to the specification of training objectives, content areas, sequencing, and learning activities that constitute the training program. Bloom's taxonomy of learning objectives (Bloom, 1956) provides a useful framework for designing training content that progresses from basic knowledge acquisition through understanding, application, analysis, synthesis, and evaluation.

Training delivery methods have evolved substantially with advances in technology and learning theory(Ntirandekura et al., 2022). Traditional instructor-led classroom training has been supplemented and in many cases replaced by on-the-job training, mentoring and coaching, simulation, e-learning, and blended learning approaches (Noe, 2017). In manufacturing contexts, on-the-job training and simulation-based learning are particularly effective because they allow workers to develop practical skills in realistic operational environments without the risks associated with live production systems (Salas et al., 2012). Post-training evaluation is the systematic assessment of training outcomes against predetermined objectives. Kirkpatrick's (1959) four-level model — reaction, learning, behaviour, and results — remains the dominant framework for training evaluation, though more sophisticated ROI-focused evaluation models have been developed by Phillips (1997).

4.2 Organisational Performance in Manufacturing

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Organisational performance in manufacturing contexts is typically assessed along dimensions of operational efficiency (throughput, downtime, waste), product quality, innovation, and employee productivity (Slack et al., 2016). Employee productivity in manufacturing is a particularly important performance metric as it directly links human resource inputs to production output volumes and per-unit production costs (Hildah, 2024). Quality performance in food processing and manufacturing, including sugar production, is critical because of regulatory compliance requirements, customer expectations, and food safety standards (ISO 22000:2018).

Empirically, the training-performance relationship has been extensively studied in developed economies. Tharenou et al. (2007) conducted a meta-analysis of 67 studies and found a mean correlation of $r = .54$ between training and organisational performance. Aguinis and Kraiger (2009) similarly concluded that training has consistently positive effects on individual and team performance, knowledge, and skills across industries. In African manufacturing contexts, Otuko et al. (2013) found a significant positive relationship between training practices and employee performance in Kenyan manufacturing firms, while Kibui et al. (2014) found that on-the-job training was the most effective method for improving production worker performance in East Africa. These findings provide a robust theoretical and empirical basis for expecting a positive training-performance relationship at Byayuya Sugar Factory.

5.0 METHODOLOGY

A quantitative, descriptive correlational research design was employed. The study population comprised 124 employees of Byayuya Sugar Factory, including production operators, maintenance technicians, quality control staff, laboratory analysts, and supervisory personnel (Nafiu et al., 2012). Using Krejcie and Morgan's (1970) sampling table, a sample of 95 was determined; however, 98 employees responded to the questionnaire, exceeding the target and yielding a final sample of 98. Stratified random sampling was used to ensure representation from all departments. Data were collected using a researcher-administered structured questionnaire with 28 items measuring training (training needs assessment: 7 items; design and content: 7 items; delivery methods: 7 items; post-training evaluation: 7 items) and 15 items measuring organisational performance (A & Ahmed, 2019). All items used a five-point Likert scale. Cronbach's Alpha coefficients were .813, .826, .809, and .791 for the training sub-scales respectively, and .847 for the performance scale, confirming adequate reliability. Content validity was established by a panel of three HRM academics and two sugar industry practitioners. Data analysis used SPSS version 25, employing descriptive statistics, Pearson correlations, and multiple linear regression (Nelson et al., 2022).

6.0 RESULTS

6.1 Descriptive Statistics

The descriptive statistics in Table 1 show that training design and content had the highest mean among training dimensions ($M = 3.56$, $SD = 0.878$), suggesting that employees perceive the content of training programs to be moderately well-designed. Training delivery methods followed ($M = 3.48$, $SD = 0.921$), while training needs assessment ($M = 3.41$, $SD = 0.912$) and post-training evaluation ($M = 3.29$, $SD = 0.967$) recorded lower means (Kazaara & Audrey, 2024). The lowest mean for post-training evaluation is particularly notable, as it suggests that the factory rarely systematically assesses whether training investments have achieved their intended outcomes — a critical weakness that undermines the ability to improve training programs over time (Gloria et al., 2023).

Regarding organisational performance, employee productivity recorded the highest mean ($M = 3.63$, $SD = 0.854$), indicating that respondents perceive productivity to be the strongest performance dimension at the factory. Service quality ($M = 3.57$, $SD = 0.881$) and organisational innovation ($M = 3.44$, $SD = 0.913$) also recorded moderate positive means, though all three performance dimensions remain below the benchmark of 4.0, indicating significant room for improvement. The relatively high standard deviations across all variables indicate heterogeneous perceptions among employees, likely reflecting differences in departmental experiences with training and performance management.

Table 1: Descriptive Statistics for Employee Training and Organisational Performance

Variable	N	Mean	Std. Dev.	Min	Max
Training Needs Assessment	98	3.41	0.912	1.00	5.00
Training Design & Content	98	3.56	0.878	1.00	5.00
Training Delivery Methods	98	3.48	0.921	1.00	5.00
Post-Training Evaluation	98	3.29	0.967	1.00	5.00
Employee Productivity	98	3.63	0.854	1.00	5.00
Service Quality	98	3.57	0.881	1.00	5.00
Organisational Innovation	98	3.44	0.913	1.00	5.00

Source: Primary Data, 2025

6.2 Correlation Analysis

Table 2 presents the Pearson correlation results. All training dimensions were positively and significantly correlated with organisational performance. Training design and content had the strongest correlation ($r = .672$, $p < .001$), followed by training needs assessment ($r = .658$, $p < .001$), training delivery methods ($r = .631$, $p < .001$), and post-training evaluation ($r = .583$, $p < .001$) (Nelson et al., 2023). The strong correlation of training design and content with performance ($r = .672$) suggests that the quality of training program design is the most critical training factor in determining organisational outcomes at Byayuya—an insight that has direct practical implications for how the factory allocates its training design resources.

The inter-correlations among training dimensions ranged from $r = .478$ to $r = .567$, indicating moderate positive relationships that confirm the interconnected nature of training process components without compromising the

distinctiveness of each dimension for regression analysis purposes. The finding that post-training evaluation has both the lowest mean and the lowest correlation with performance ($r = .583$) is consistent with Kirkpatrick's (1959) observation that organisations often invest in training delivery but neglect the evaluation phase, thereby limiting their ability to continuously improve training effectiveness. Despite being the weakest correlation among training dimensions, $r = .583$ remains a strong positive relationship, confirming that even imperfect post-training evaluation contributes to organisational performance.

Table 2: Pearson Correlation Matrix

Variable	1	2	3	4	5	Sig.
1. Training Needs Assessment	1.000					
2. Training Design & Content	.534**	1.000				
3. Training Delivery	.512**	.567**	1.000			
4. Post-Training Evaluation	.478**	.521**	.489**	1.000		
5. Organisational Performance	.658**	.672**	.631**	.583**	1.000	.000

** Correlation is significant at the 0.01 level (2-tailed)

Source: Primary Data, 2025

6.3 Regression Analysis

The multiple regression model was statistically significant ($F(4,93) = 37.24$, $p < .001$), explaining 61.5% of the variance in organisational performance ($R^2 = .615$, Adj. $R^2 = .599$). Training design and content emerged as the strongest individual predictor ($\beta = .347$, $t = 4.676$, $p < .001$), confirming the correlation findings (Nelson et al., 2023). Training delivery methods were the second strongest predictor ($\beta = .298$, $t = 3.753$, $p < .001$), followed by training needs assessment ($\beta = .283$, $t = 3.676$, $p < .001$) and post-training evaluation ($\beta = .211$, $t = 2.954$, $p = .004$). All four training dimensions were statistically significant predictors of organisational performance (Julius & Kazaara, 2026).

The constant in the regression equation ($B = 0.834$, $p = .001$) indicates that some baseline level of organisational performance exists independent of training investment, which may reflect individual motivation, prior experience, and equipment quality (Christopher & Shamirah, 2025). However, the substantial R^2 of .615 confirms that training practices are the dominant institutional driver of performance variation within the factory. The adjusted R^2 of .599 is very close to the unadjusted R^2 , indicating minimal over fitting and suggesting that the model generalizes well to the broader factory population.

Table 3: Multiple Linear Regression on Employee Training Predicting Organisational Performance

Model	B	Std. Error	Beta (β)	t-value	Sig.
(Constant)	0.834	0.247		3.376	.001

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Training Needs Assessment	0.261	0.071	.283	3.676	.000
Training Design & Content	0.318	0.068	.347	4.676	.000
Training Delivery Methods	0.274	0.073	.298	3.753	.000
Post-Training Evaluation	0.192	0.065	.211	2.954	.004
R = .784, R ² = .615, Adj. R ² = .599, F(4,93) = 37.24, p < .001					

Source: Primary Data, 2025

7.0 DISCUSSION OF RESULTS

The finding that training design and content is the strongest predictor of organisational performance ($\beta = .347$) aligns with Goldstein and Ford (2002) and Noe (2017), who emphasise that the quality of training program design including clear learning objectives, relevant content, appropriate sequencing, and learner-centred approaches is the primary determinant of training effectiveness. In the sugar manufacturing context, this finding suggests that Byayuya should invest heavily in the design phase of training, ensuring that training programs are built around specific operational competencies-machine operation, quality testing protocols, safety procedures — rather than generic content.

The significant positive relationship between training delivery methods and performance ($\beta = .298$) is consistent with Salas et al. (2012), who found that practical, simulation-based delivery methods were particularly effective in manufacturing settings. Given that Byayuya currently relies primarily on lecture-based training, the factory has significant opportunity to improve performance outcomes by shifting towards on-the-job training, mentoring, and simulation-based methods that are more appropriate for technical production roles. The low mean for post-training evaluation ($M = 3.29$) combined with its significant beta coefficient ($\beta = .211$) indicates both a current weakness and a significant opportunity — improvements in post-training evaluation would yield measurable performance gains at relatively low cost. The overall explanatory power of 61.5% is consistent with Tharenou et al.'s (2007) meta-analytic finding of a mean R^2 of .58 across training-performance studies in manufacturing contexts. This consistency with international benchmarks provides confidence in the validity of the current study's findings and suggests that Byayuya's training-performance dynamics are broadly comparable to those observed in manufacturing firms globally.

8.0 CONCLUSIONS AND RECOMMENDATIONS

This study concludes that employee training is a positive, significant, and substantial predictor of organisational performance at Byayuya Sugar Factory, accounting for 61.5% of performance variance. Training design and content and training delivery methods are the strongest performance drivers, while post-training evaluation is the weakest dimension with the most room for improvement. These findings provide strong empirical support for increased investment in structured employee training at the factory.

The study recommends that Byayuya Sugar Factory develop and implement a formal Human Resource Training and Development Policy that specifies training frequency, budget allocation, delivery standards, and evaluation requirements. The factory should establish an annual Training Needs Assessment process, involving department heads and line supervisors, to identify specific skill gaps before designing training programs. Training delivery should shift towards practical, on-the-job methodologies including mentoring, coaching, and skills demonstrations on factory equipment. A post-training evaluation system based on Kirkpatrick's four-level model should be implemented, with quarterly performance reviews to assess the application of training on the job. The factory's management should also explore partnerships with vocational training institutions in eastern Uganda to provide structured technical training to production workers.

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