

E-Training and Employee Performance in Food and Beverage Manufacturing Firms in Nairobi City County, Kenya

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ABSTRACT

The manufacturing industry remains crucial for growth in numerous emerging states, such as Kenya. However, this sector encounters a myriad of challenges concerning employee performance, including subpar service quality, inefficiency, a lack of innovation, ineffectiveness, and an inability to achieve established objectives. This study intended to assess the effect of the e-training on employee performance in food and beverage manufacturing companies in Nairobi City County, Kenya. The research was anchored on Human Capital Theory. The study adopted a descriptive and explanatory research design. The target population was 264 employees, and the sample size was 160 individuals, who were selected by the use of stratified random sampling as well as simple random sampling. The investigation utilized both the questionnaire and an interview guide to gather information. Data analysis involved descriptive statistics, Pearson's correlation, and panel regression analyses. The study found that e-training moderately improved skill tracking but had limited effect on training precision and performance. This study suggests that organizations should incorporate e-training throughout the employee lifecycle.

Keyword: e-training, Employee performance, Manufacturing Firms

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INTRODUCTION

Manufacturing firms face several challenges in their quest for survival and expansion (Baariu, 2021). These include subpar service quality, inefficiency, a lack of innovation, ineffectiveness as well as failure to acknowledge the contributions of employees. According to (Muhudin, 2019), poor employee performance is as a result of inadequate career development opportunities, poor stock options, and a lack of reward incentive systems. Manufacturing firms, face many employee performance challenges, including: poor quality of service, lack of creativity, failure to achieve set goals, general inefficiency, and ineffectiveness (Mire, 2019). Organizations also struggle with low employee commitment, limited opportunities for career advancement, inadequate relevant institutional policy, insufficient departmental and directorate-level synergy, and high staff turnover (Makembo & Oluoch, 2018). Many factors, such as low productivity, a weak financial rewards system, and a lack of employee recognition in the industry, have combined to create a toxic work environment for workers in manufacturing firms (Njue & Kiiru, 2018).

The effectiveness of an organization is significantly influenced by employee performance (Njeje, Chepkilot & Ochieng, 2018). The management and employees must understand the performance management process, and the performance goals must be clear to everyone (Koech, 2022). Further, performance appraisal involves establishing work-related standards, while giving employees feedback to help them improve. The balanced scorecard can connect performance metrics throughout an organization and convert overarching objectives into more detailed activities (Indiyaningsih, 2020). Subsequently, measures are implemented for individual employees to track their performance. The performance standards established must be explicit, well-articulated, and, crucially, relevant to the tasks carried out by employees and feasible.

Hassan, Hassan and Yen (2020) operationalized e- training & development as productivity, job efficiency, outcomes, and organizational commitment. e- Training & Development in the current study is operationalized as compilation of human resource competencies, evaluation of training requirements, advantages of employee training, and documentation of training expenditures. In the current study, e-training and development was conceptualized by compilation of HR competencies, evaluation of training requirements, advantages of employee training, and documentation of training expenditures.

Statement of the Problem

Manufacturing firms faces many employee performance challenges, including; poor quality of service, lack of creativity, failure to achieve set goals, general inefficiency, and ineffectiveness (Mire, 2019). Organizations also struggle with low employee commitment, limited opportunities for career advancement, inadequate relevant institutional policy, insufficient departmental and directorate-level synergy, and high staff turnover (Makembo & Oluoch, 2018).

A number of research has been carried out in Kenya. For instance, Mutua et al. (2022) undertook an investigation that assessed the impact of workforce planning via Human Resource Information Systems on worker productivity at NSSF in Kenya. The context of most of the studies that have been carried out emphasizes the significance of Human Resource Information Systems on the general productivity of firms: Odero (2022): Mwangi & Reuben (2019); Evaline and Alexander (2021): Kiruja (2021): Mutiku & Misango (2019), hence a contextual and conceptual gap. Other research studies evaluated the impact of Human Resource Information Systems on worker performance, yet concentrated on varying variables, methodology, conceptual and empirical literature: Walichio, Amuhaya & Muchelule Koech (2022), Pushpasiri and Pushpasiri (2021), Afifah and Sary (2020).

Most of the research results and collected data suggest that many studies concentrated on the impact of HRIS on the general organizational productivity. This highlights a considerable knowledge deficiency concerning how organizations leverage Human Resource Information Systems to enhance employee performance, particularly with organizational support acting as a moderating factor. The current research intends to handle these contextual, conceptual, methodological, and empirical research gaps by exploring the effect of e-training on employee performance in food and beverage manufacturing firms in Nairobi City County.

Objectives of the study

The study sought to assess the effect of e-training on employee performance in food and beverage manufacturing firms in Nairobi City County, Kenya.

THEORETICAL REVIEW

Humana Capital Theory This theory was established in the 1950s and early 1960s by Gary Becker and Theodore Schultz (Wuttaphan, 2017). According to Schultz (1961), this theory holds that technical knowhow and skillset, which are types of capital, are a consequence of intentional firm advancement. The core principle of human capital theory posits that formal education plays a vital role in is essential to increasing productivity levels of a population (Wuttaphan, 2017). Advocates of this theory argue that a well-educated populace is more productive. According to the theory, workers' productivity and efficiency are increased by education by increasing their cognitive reservoir of economically valuable human potential, which is derived from both their inherent abilities and the investments made in developing those abilities (Marginson, 2019).

The theory submits that to increase human output, which sequentially results in favorable returns on investments and the expansion of businesses, investing in individuals through education and training are essential (Nemeth, 2017). According to Schultz, organizations need to allocate resources towards their workforce to yield significant returns and achieve a competitive edge. According to the human capital theory, investing in knowledge is essential to gain the knowledge and experience necessary to increase one's capital (Marginson, 2019). Since a person's wage in the ideal labor market is determined by their productivity, this knowledge and skills will help the individual become more productive and earn a higher salary.

The HRM department oversees the organization's hiring, management, and workforce optimization. The HRM division is also responsible for hiring, training, and developing employees as well as for reporting and analytics

(Tan, 2014). The staffing function of human resource management must successfully find, hire, and acquire employees with the human capital required for the organization's needs (Wuttaphan, 2017). One company's labor management may be considered the result of its human resources and human processes advantages. Employers can attract and retain human capital and increase the returns on their investments by investing in their training and development (Galiakberova, 2019). Enhancements in performance, productivity, adaptability, and the ability to innovate are expected to arise from expanding the skill set and increasing knowledge and proficiency levels. The employee performance variable in this study is supported by human capital theory. Furthermore, e-training and development are presented as a record of training expenses, an inventory of HR skills, an evaluation of training requirements, and the benefits of employee training.

EMPIRICAL LITERATURE REVIEW

E-training and Development Systems and Employee Performance

Chen (2018) asserted that e-training and development merges technology with education resulting to enhancement in decision making, streamlining of operations and automation of HR services resulting to better performance of firms. Further Chen (2018) posited that this transformation enables employees to enjoy a tailored learning experience without the need to visit a physical site. However, while Chen's study highlights the general benefits of e-training and development, it does not address how these systems specifically influence employee performance within F&B manufacturing companies in Nairobi City County, nor does it consider the moderating role of organizational support. This creates a niche which the present investigation intends to address.

Hassan, Hassan and Yen (2020) did a study on e-training and development, drive, as well as worker productivity among academicians. The investigation focused on faculty members in UniMAP in various programs at Universiti Malaysia Perlis. Self-built questionnaire and a quantitative style with a descriptive as well as correlational focus were integrated in the study. The findings indicated that motivation, e-TD can all significantly impact how well academicians perform at their jobs at Universiti Malaysia Perlis. The research suggested that upcoming investigations ought to emphasize on the advancement of new e-training technologies for professionals. There exists a methodological gap as well as a contextual niche as the existing investigation concentrated on F&B Manufacturing companies in Nairobi.

Janna, Wolor and Suhud (2021) did a study on the impact of e- -training, professional growth, and employee resilience impact the productivity of State-Owned Enterprises providing survey services in Indonesia. The workforce of a particular State-Owned Enterprise dedicated to survey services in Indonesia made up the study's sample. The investigation used 270 employees selected by purposive sampling. The structured questionnaire was employed to gather data. Amos 24 was utilized for the scrutiny of the information utilizing structural equation modeling (SEM) as well as exploratory factor analysis. The outcomes confirmed that occupation advancement and e-training pointedly improved worker resilience. Worker output was meaningfully positively impacted by career development and resilience. The study also established that e-training has no impact on worker output. However, the study only addressed State-Owned Enterprises within Indonesia and cannot be applied to Nairobi City County F&B manufacturing companies' realities. In addition, the moderating role of organizational support in mediating the influence of e-training on performance was not examined, and there is a contextual and conceptual niche that the existing investigation seeks to fill.

An analysis of the effects of automated training and recruitment on the effectiveness of human resources at Telkom Kenya was conducted by Mwangi and Reuben (2019). A sample of 105 participants was chosen from the target group of 210 employees divided into three groups of managers, supervisors and general employees to conduct a qualitative study. This study collects primary data from participants through surveys and secondary data using the company's website. Descriptive As well as inferential statistics were applied for information processing and analysis. The results showed that the organization's website improved the hiring of potential employees and helped in training, thus improving employee productivity. The study's recommendations include the need for companies to focus on e-training and recruiting to achieve their desired workforce goals. One gap of this study is that it focuses on business communication while the current study focuses on food and beverage manufacturers. Also, there is a difference in methodology since the present study applied descriptive and explanatory research design.

RESEARCH METHODOLOGY This research employed the quantitative and qualitative approach designs (Kaushik & Walsh, 2019). According to the principle of pragmatic research methodology, methodological and/or philosophical approach should be used as they best addresses the particular research question they are attempting to answer (Park et al., 2020). The study sought to generate practical and context-relevant insights on how e-training influence employee performance in food and beverage manufacturing firms. Descriptive research was utilized in this study. The descriptive design enabled systematic collection and presentation of data on e-training and employee performance, providing transparency of food and beverage manufacturing firms' states. The senior managers, HR managers, IT managers and staff of the organization were the observational unit. Top management, are the individuals responsible for implementing the information systems in an organization.

To guarantee accuracy and completeness, the gathered data was carefully edited. To make systematic organization and retrieval easier during analysis, it was coded. Subsequently, it was displayed in a user-friendly and informal manner, incorporating pie charts, tables, and graphs to facilitate easier analysis and interpretation. Quantitative data was examined through descriptive statistics in SPSS (Version 26) and was displayed as percentages, means, standard deviations, and frequencies. Qualitative data, derived from open-ended questions, underwent analysis. The diagnostic tests were done to test regression assumptions.

DATA ANALYSIS AND INTERPRETATION

Effect of e-Training and Development Systems on Employee Performance

Respondents were given varying statements on effects of e-training and e-development systems on employee performance among food and beverage factories in Nairobi. They were expected to rate how they agree with the statements on a scale of 1-5 with 1 being strongly disagree and 5 being strongly agree. The results are presented in the table below.

Table 1 Effect of e-Training and Development Systems on Employee Performance Descriptive Statistics

	N	Mean	Std. Deviation
E-training guarantees a current inventory of skills	160	3.41	1.286
Training and development process has been enhanced	160	2.76	1.200
E-training assists in monitoring training, skills, and competencies	160	3.63	.895
E-training enhances the documentation of training expenses	160	3.33	1.062
There is precision in training data within the organization	160	2.39	1.165
E-training can aid in making decisions regarding career management and succession planning	160	3.34	.932
E-training and development boost employee performance	160	3.32	1.184
E-training optimizes the utilization of data for planning and managing various training interventions	160	3.04	.927
Valid N (listwise)	160		

Source: Research Data (2026)

From the analysis, the statement “e-training assists in monitoring training, skills and competencies” had the highest mean of 3.63 with a standard deviation of 0.895. this suggests that the respondents had a strong agreement that e-training systems were affecting in monitoring and tracking the capabilities of employees. The low standard deviation indicates there was an agreement among them, implying that monitoring capability is a universally recognized feature of e-training systems in the manufacturing sector. These findings align with Kaplan and Haenlein (2016) who highlighted that digital platforms are essential in providing real-time assessment and tracking which enables companies to maintain an up-to-date record of employee competency progression and skill development.

“E-training guarantees a current inventory of skills” follows with a mean score of 3.41 and a standard deviation of 1.286. This suggests that there is a moderate agreement among the participants regarding how e-training systems help in maintaining up to date inventory of employee skills. However, the higher variability suggests that the participants had differing perceptions or experiences possibly due to different levels of implementation across different food and beverage manufacturing companies in Nairobi. These findings are consistent with

research done by Revuelta-Domínguez and others (2022) who state that even though e-training systems have the potential of maintaining an up-to-date skill database of employees, its effectiveness is largely dependent on system maintenance and data input practices across organizations.

The statement “E-training and development can aid in making decisions regarding career management and succession planning” had a mean of 3.34 and a standard deviation of 0.932. This shows a moderate agreement that employees recognize the potential e-training has on career development, even though there may be room for improvement on how these systems can be used for succession planning. These results align with the findings of Isfianadewi and Anggraita (2020) who posited that if e-training systems are properly integrated with HRIS, they have the potential of significantly enhancing career development planning through the provision of a proper skill gap analysis and competency planning.

“E-training enhances the documentation of training expenses” had a mean of 3.33 and a standard deviation of 1.062. This shows moderate agreement with the statement. It implies that even though the benefits of financial tracking in e-training are acknowledged, its implementation across organizations varies. These findings align with research by Phillips and Phillips (2016) who suggested that e-training systems have the potential of providing exemplary cost tracking and return on investment measurement capabilities in comparison to traditional training methods. However, the quality of implementation varies significantly across different organizations.

“E-training and development boosts employee performance” had a mean score of 3.32 with a standard deviation of 1.184. Despite this being the core objective, it received a moderate rating which indicates that even though employees see some performance benefits in e-training, the impact may not be pronounced as expected. Also, the higher standard deviation shows varying outcomes of performance improvement. The outcomes contradict the research done by Bell and Kozlowski (2018) who highlighted that there is a high positive correlation between e-training implementation and employee performance. This suggests that contextual factors within Nairobi’s food and beverage manufacturing may influence the effectiveness of e-training

E-training optimizes the utilization of data for planning and managing various training interventions had a mean score of 3.04 and a standard deviation of 0.927. This suggests that the respondents were neutral and slightly agreed that while data optimization capabilities exist within Nairobi’s manufacturing sector, they are not fully utilized or their benefits may not be apparent to employees. These results corroborate the findings of Barišić and others (2021) who established that a lot of organizations do not exploit their e-training analytical capabilities fully. This is majorly due to limited data literacy and inadequate system features training among Human Resource personnel.

The lowest scoring items reveal significant concerns: “Training and development process has been enhanced” had mean of 2.76 and standard deviation of 1.20. The statement “There is precision in training data within the organization” had a mean of 2.39 and a standard deviation of 1.165. These low scores suggest that employees in Nairobi’s food and beverage manufacturing feel actual training processes have improved significantly and data accuracy is still a problem despite having e-training systems. Also, the higher standard deviation suggests varying experiences with some organizations possibly performing better than others in e-training. These findings align with those of Sala and others (2017) who established that proves improvement and data quality are common challenges that organizations face in e-training implementation. This often comes from insufficient system customization and inadequate change management.

In the interviews, the respondents were asked how e-TDS had played a role in influencing employee performance in food and beverage factories in Nairobi City. One of the respondents said that “*The e-training system has helped our workers learn new skills faster, especially for food safety procedures.*” Another suggested that “*Even though systems track completion of training well, we have not been able to see any significant improvement in employee performance as expected. Some employees still prefer hand-on training compared to computer-based training.*” This suggests that some employees are not comfortable with e-training which could probably be due to their computer literacy. Another respondent stated that “*e-training is essential to me as it helps me keep up with new procedures, but sometimes these procedures do not match with our actual work environment.*” This shows the existence of a disconnect between existing training strategies and practical work environment.

Regression Analysis

Table 2 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.986 ^a	.972	.971	.154

a. Predictors: (Constant), e-Training

b. Dependent Variable: Employee Performance

Source: Research Data (2026)

The model summary provides insights on the relationship between the predictor (e-Training) and dependent variable (Employee Performance). Also, this model, $R^2 = 0.972$. The coefficient of determination R^2 is used to measure of how well the predictors have explained the variation in the dependent variable. The coefficient of determination indicates that about 97.2% of variance in employee performance can be shown using predictor that was included. It implies that there is an extremely strong relationship between the components of e-training and employee performance outcomes. The correlation coefficient $R = 0.986$ suggests a very strong and positive correlation between e-training and employee performance outcomes

Table 3 ANOVA Analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	127.545	4	31.886	1336.011	<.001 ^b
	Residual	3.699	155	.024		
	Total	131.244	159			

a. Dependent Variable: Employee performance

b. Predictors: (Constant), e-Training

Source: Research Data (2026)

The ANOVA results showed statistical significance of overall model. F being 1336.011 and $p < 0.001$ hence the regression model is highly significant. Further, it confirms that the predictors had a collective substantial impact on employee performance. Explained variance is larger than the unexplained one which supports the validity of the model.

The standard error estimate of 0.154 is small and indicates predictions of the model are quite precise and that there is a small unexplained variation in employee performance. Overall, the regression analysis indicates that e-Training have a significant effect to employee performance in food and beverage manufacturing factories in Nairobi City County, Kenya.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

e-training and development systems are effective means of measuring and monitoring employee competence but are severely deprived by implementation barriers which prevent them from having a direct impact on actual performance improvement. Though these systems are effective in maintaining skill inventories and aiding career planning, their performance is constrained by accuracy issues with data, weak connection with real-world work environments, and employee preference for traditional hands-on training methods. The moderate e-training effect on employee performance suggests that organizations have to enhance the implementation quality and acceptance by the users to realize the full potential of these systems.

Recommendations

Organizations are to conduct regular and timely e-training sessions at key stages of employee development to enable ongoing skills development and performance enhancement. HR departments must take formal feedback mechanisms to demonstrate how e-training inputs are weighted in career development decisions and performance management systems. Organizations must ensure accessibility of e-training systems to all employees, including employees with varying computer literacy levels, by providing multiple learning formats

and comprehensive support. Training coordinators must utilize competent facilitators for e-training programs to ensure effective learning experiences and meaningful skill acquisition.

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