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Influence of Housing Programmes on Employee Performance Among Fairtrade-Certified Flower Farms in Nakuru County, Kenya

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Abstract

This study examined the relationship between housing programmes and employee performance among Fairtrade-certified flower farms in Nakuru County, Kenya, guided by the Job Demands–Resources (JD-R) model. A cross-sectional research design was adopted, and data were collected using structured questionnaires. The target population comprised approximately 10,250 employees across 36 Fairtrade-certified flower farms. Using Yamane's formula, a target sample of 231 respondents was determined. Purposive sampling selected the farms, while stratified random sampling selected employees. Of the 231 questionnaires administered, 201 were returned, and two were excluded due to incomplete responses, yielding 199 valid responses. Data were analysed using descriptive statistics, Pearson's correlation and multiple linear regression. Housing programmes were implemented to a moderate extent ($M = 3.155$, $SD = 0.743$), with housing maintenance and hygiene among the lowest-rated aspects. Housing programmes had a positive, statistically significant correlation with employee performance ($r = .526$, $p < .001$). After controlling for health, time-off and recreational programmes, housing remained a significant positive predictor of employee performance ($B = .153$, $\beta = .172$, $t = 2.532$, $p = .012$). The overall regression model was significant, $F(4, 194) = 41.985$, $p < .001$, explaining 46.4 per cent of the variance in employee performance ($R^2 = .464$). The null hypothesis was therefore rejected. The findings indicate that decent, hygienic, secure and accessible accommodation is associated with employee performance. The study recommends routine housing inspections, timely repairs, adequate sanitation and employee feedback to guide accommodation improvements. However, the cross-sectional design limits causal conclusions.

Key words: Employee performance, employee welfare, fairtrade, flower farms, housing programmes, Nakuru county.



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INTRODUCTION

Employee welfare programmes address employees' working and living conditions and may support their ability to perform effectively. In labour-intensive sectors such as floriculture, welfare is particularly important because production depends heavily on employees undertaking time-sensitive and physically demanding activities. The housing construct in this study covered housing quality and adequacy, access to utilities, proximity to the workplace, cleanliness and security. Fairtrade certification and private social standards are relevant to discussions of labour conditions in flower supply chains. Research on East African cut-flower industries shows that private standards can create opportunities for worker representation and influence workplace standards, although their ability to transform wider power relations may be limited (Riisgaard, 2009). The specific welfare provisions available to workers may vary by farm and context; therefore, the present study focuses on employees' reported experience of housing programmes rather than assuming that all farms provide identical arrangements.

Fairtrade-certified flower farms provide various welfare interventions, including housing, health, time-off and recreational programmes. These interventions are intended to improve employee well-being and create conditions that support attendance, dedication and productivity (Korir & Ndegwa, 2020). The study conceptualised welfare programmes as strategies that may help employees manage work demands. Employee performance was assessed through self-reported perceptions of productivity, quality of work, punctuality, attendance and efficiency. Housing support is particularly relevant in flower farming because employees often face challenges in commuting long distances to and from work. Accessible and decent housing may reduce commuting challenges, facilitate punctuality and support regular attendance. The study therefore examined the relationship between housing programmes and employee performance among Fairtrade-certified flower farms in Nakuru County, Kenya.

The problem addressed by this study arises from the need for context-specific evidence on the

relationship between employee housing and performance in the floriculture sector. Kenyan studies have examined employee welfare programmes and employee performance in other organisational settings. Mutuku and Makhmara (2022) investigated welfare programmes at the Energy and Petroleum Regulatory Authority, while Onwong'a and Ng'eno (2022) examined welfare services, including housing, among police officers in Mombasa County. Although these studies provide relevant evidence on employee welfare, they do not directly address the relationship between employee housing conditions and task performance among employees in agricultural horticulture settings. The study therefore addressed a contextual and empirical gap by examining employee housing programmes among Fairtrade-certified flower farms in Nakuru County, Kenya. Specifically, it assessed housing adequacy and quality, proximity to the workplace, access to essential utilities, cleanliness and security in relation to employee performance. Performance was assessed using the self-rated task performance technique, which captured employees' perceptions of their productivity, quality of work, punctuality, attendance and efficiency.

The objective of the study was to determine the relationship between employee housing programmes and employee performance among Fairtrade-certified flower farms in Nakuru County, Kenya. The study tested the null hypothesis that employee housing programmes have no statistically significant association with employee performance among Fairtrade-certified flower farms in Nakuru County, Kenya.

The study focused on employee housing programmes and employee performance among Fairtrade-certified flower farms in Nakuru County, Kenya. The housing construct covered adequacy and quality of accommodation, proximity to the workplace, availability of clean water and electricity, cleanliness and security. Employee performance was assessed through employees' self-reported perceptions of productivity, quality of work, punctuality, attendance and efficiency in executing their assigned duties. The findings will assist flower-farm management in evaluating housing programmes and identifying

areas requiring improvement. Human resource practitioners could use the findings to inform employee welfare policies and resource allocation. Employees may benefit from improvements in accommodation and living conditions, while researchers could use the findings as context-specific evidence for further studies on employee housing and task performance in the floriculture sector. The study is also relevant to flower-farm managers and human-resource practitioners responsible for employee welfare and operational reliability. It informs Fairtrade-related discussions about the practical implementation of worker welfare while providing a contextual reference for future research on welfare and performance in agricultural workplaces. However, the geographical scope is limited to Fairtrade-certified flower farms in Nakuru County; therefore, the findings should not automatically be generalised to non-certified farms or other agricultural sectors.

LITERATURE REVIEW

Theoretical Framework: Job Demands–Resources Model

The study was guided by the Job Demands–Resources (JD-R) Model developed by Demerouti et al. (2001) and further developed by Bakker and Demerouti (2017). The model distinguishes between job demands, which require sustained physical or psychological effort, and job resources, which help employees achieve work goals, manage demands and support motivation. It proposes two broad processes: a health-impairment process, in which prolonged demands can deplete employees' energy, and a motivational process, in which resources support engagement and positive work-related outcomes. Subsequent developments of the model emphasise the interaction between job demands, resources and employee wellbeing in different work contexts (Bakker et al., 2023).

Applied to the floriculture industry, employee housing can be understood as a resource when accommodation is safe, hygienic, adequately maintained and reasonably accessible to the workplace. Suitable housing may ease accommodation-related pressures, reduce commuting

difficulties and allow employees more time and energy for work and recovery.

The JD-R Model provides a theoretical basis for examining whether housing programmes are associated with employee performance in Fairtrade-certified flower farms in Nakuru County. In this study, employee performance was assessed through productivity, quality of work and attendance. The model informed the proposed relationship between housing programmes and these outcomes, but the cross-sectional research design and statistical analyses establish associations rather than causation.

Empirical Literature Review

Fairtrade Standards and Labour Conditions in the Cut-Flower Industry

Riisgaard (2009) examined labour organisation and private social standards in the East African cut-flower industry, including Kenya and Tanzania. The study explored how workers and labour organisations engaged with private standards within global flower supply chains. It found that private standards could create opportunities for workers' representation and influence workplace standards, although their capacity to transform wider power relations within the industry remained limited. This study provides an important foundation for understanding Fairtrade and other private certification initiatives as mechanisms for addressing labour conditions. However, its primary focus was labour organisation and standards rather than the statistical relationship between housing programmes and individual employee performance.

Research on labour organisation and private social standards in the East African cut-flower industry highlights the importance of examining workers' actual conditions and experiences (Riisgaard, 2009). However, this literature does not directly establish whether housing programmes are associated with productivity, quality of work and attendance among employees of Fairtrade-certified flower farms in Nakuru County.

These studies suggest that certification and welfare arrangements should be considered within the actual conditions experienced by workers. They also

indicate the need to distinguish between the existence of welfare provisions and their relationship with measurable employee outcomes.

Employer-Provided Housing, Worker Welfare and Dependence

Employer-provided accommodation may offer practical benefits when it gives workers access to housing near the workplace. However, the value of such arrangements depends on the quality, hygiene, safety, maintenance and accessibility of the accommodation. Housing accessibility should therefore be assessed in terms of both availability and employees' experiences of the facilities.

For flower farms in Nakuru County, housing programmes should therefore be assessed not only by the availability of accommodation but also by its condition, hygiene, safety, maintenance and accessibility to the workplace. Research on commuting has also linked longer commuting times with sickness absence among workers (Gimenez-Nadal et al., 2022). Such evidence suggests that housing accessibility may be relevant to employee attendance, although the relationship between housing programmes and productivity, quality of work and attendance among employees of Fairtrade-certified flower farms in Kenya requires context-specific investigation.

Housing Accessibility, Commuting and Employee Attendance

Commuting is another factor relevant to the potential relationship between housing and employee performance. Gimenez-Nadal et al. (2022) examined commuting time and sickness absence among workers in the United States using longitudinal data. Their findings indicated an association between longer commuting time and increased sickness absence. This evidence suggests that access to work may be relevant to attendance, but it does not prove that employer-provided housing will necessarily improve performance in flower farms.

These studies provide a plausible explanation for why housing near the workplace, or other arrangements that improve access to work, may be relevant to employee attendance and performance.

However, they investigate commuting rather than employer-provided housing itself. The evidence therefore supports the potential importance of accessibility but does not prove that providing housing will necessarily reduce absenteeism or improve productivity in flower farms.

Employee Welfare Programmes and Performance

Research conducted in Kenya provides additional evidence on the relationship between welfare and employee outcomes. Mutuku and Makhamara (2022) examined welfare programmes and employee performance at the Energy and Petroleum Regulatory Authority, while Onwong'a and Ng'eno (2022) studied welfare services, including housing, and police officers' performance in Mombasa County. These studies are relevant to the wider welfare–performance relationship, but their findings arise from different organisational settings and do not directly establish the contribution of housing programmes in the floriculture sector.

Kuria (2012) examined employee welfare programmes and job satisfaction at Sueka Company Limited in Kenya's flower industry. The study is relevant because it focuses on employee welfare within a floriculture setting. However, job satisfaction is different from employee performance, and evidence about one outcome cannot automatically be generalised to productivity, quality of work or attendance.

METHODOLOGY

The study adopted a cross-sectional research design to examine the relationship between housing programmes and employee performance among Fairtrade-certified flower farms in Nakuru County, Kenya. Data were collected at one point in time using structured questionnaires. Given the cross-sectional, non-experimental design and reliance on self-reported data, the findings were interpreted as statistical associations rather than definitive evidence of causation.

The target population comprised 10,250 employees working in the participating Fairtrade-certified flower farms. The workforce included employees in production and harvesting, grading and packing,

quality assurance, and administration or support functions. Eligible participants were full-time employees aged 18 years and above who had worked regularly on their respective farms for at least six months. Management staff and employees who did not meet these eligibility criteria were excluded. The farms were purposively selected based on their relevance to the study, while stratified sampling and simple random selection were used at the employee level. Employee rosters provided by the farms' human resource departments served as the sampling frame. Eligible employees were grouped by occupational category, and the sample was proportionately allocated across the geographical and occupational strata. Employees were then randomly selected from the relevant lists, with unavailable participants replaced through random selection from the same occupational group and geographical stratum.

The sample size was determined using Yamane's formula, $n = N / [1 + N(e^2)]$, where n represents the required sample size, N the target population of 10,250 employees, and e the margin of error of 0.065. The study targeted 231 respondents, to whom 231 questionnaires were administered. Of these, 201 were returned, and two were excluded because of incomplete responses on key constructs, resulting in a final analytical sample of 199 respondents. This represented a response rate of 86.1 per cent of the questionnaires administered, while the initial return rate was approximately 87.0 per cent.

Data were collected using a structured questionnaire adapted to the flower-farm context. The housing section comprised eight statements measuring employees' perceptions of housing adequacy, proximity to the workplace, access to clean water and electricity, security, maintenance and hygiene, and the perceived contribution of housing to punctuality, reduced absenteeism and work performance. Responses were rated on a five-point scale ranging from 1 (to a very low extent) to 5 (to a very great extent). Housing programmes were operationalised using a composite score derived from the eight items. This measure reflected employees' self-reported perceptions rather than independent physical inspections of housing facilities. Employee

performance was the dependent variable and was measured using employees' reported productivity, quality of work and attendance. The relationship between the housing score and employee-performance score was then examined statistically.

A pilot study involving 27 employees was conducted at Ravine Flowers in Baringo County, outside the main study area. Participants represented production, grading and packing, quality assurance, and administration. The pilot assessed the clarity, relevance and completeness of the questionnaire, the suitability of response options, the time required for completion, and the practicality of questionnaire distribution and collection. Feedback informed revisions to ambiguous questions and clarification of instructions. Pilot responses were excluded from the main study dataset.

Content validity was addressed by aligning the housing items with the study objective and the operational definition of housing programmes. Individuals with knowledge of human resource management and agricultural employee welfare reviewed the instrument for relevance and clarity. Internal consistency was assessed using Cronbach's alpha in IBM SPSS Statistics version 29. The eight-item housing scale recorded a Cronbach's alpha of 0.959 based on the main-study data ($n = 199$), exceeding the commonly used minimum threshold of 0.70.

Before data collection, ethical approval was obtained from the Kabarak University Research Ethics Committee (KUREC), research authorisation was obtained from the National Commission for Science, Technology and Innovation (NACOSTI), and permission was sought from the management of each participating farm. Trained research assistants administered the questionnaires to eligible employees, explained the study and obtained informed consent without influencing responses. Participants were informed of the study's purpose, procedures, potential risks and benefits, and their right to decline participation or withdraw without penalty. Participation was voluntary, and respondents were not required to provide their names or personal identification details. Responses were treated

confidentially, used for academic purposes and reported in aggregate form to minimise the risk of identifying individual employees. Permission from farm management did not replace the requirement for individual informed consent.

RESULTS AND DISCUSSION

Descriptive and Correlation Results

Housing programmes had a composite mean of 3.155 (SD = 0.743), indicating a moderate level of

implementation. Maintenance and hygiene of existing housing facilities were among the lowest-rated aspects. Pearson correlation analysis showed a positive and statistically significant relationship between housing programmes and employee performance ($r = .526$, $p < .001$). The correlation indicates that higher ratings of housing programmes tended to occur alongside higher ratings of employee performance; it does not, on its own, demonstrate causation.

Table 1: Regression Model Summary

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.681	.464	.453		.489

The model produced $R = .681$. The R^2 value of .464 means that the four predictors entered together (housing, health, time-off and recreational programmes) accounted for 46.4 per cent of the observed variance in employee performance in this sample. The adjusted R^2 was .453 (45.3%), which adjusts the estimate for the number of predictors and

sample size. The remaining 53.6 per cent of variance was not explained by this model and may reflect other factors, measurement error or random variation. Crucially, 46.4 per cent is the explanatory power of the overall four-predictor model; it is not the percentage explained by housing alone.

Table 2: Analysis of Variance

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	40.115	4	10.029	41.985	< .001
Residual	46.339	194	.239		
Total	86.454	198			

The overall regression model was statistically significant, $F(4, 194) = 41.985$, $p < .001$. This indicates that the four welfare-programme predictors,

considered together, were statistically associated with employee performance.

Table 3: Regression Coefficients for Housing Programmes

Variable	B	Std. Error	Beta (β)	t	Sig.
Housing programmes	.153	.060	.172	2.532	.012

The overall model $R^2 = .464$ means that all four welfare predictors together account for 46.4 per cent of the sample variance in employee performance. Second, the bivariate correlation between housing and performance is $r = .526$; squaring this gives $r^2 = .277$, approximately 27.7 per cent shared variance before controlling for the other welfare programmes.

This is an unadjusted two-variable association and must not be reported as housing's unique contribution in the multiple regression. Third, the housing coefficient's t statistic can be used to estimate its unique incremental contribution after the other three predictors are controlled.

The four welfare-programmes predictors jointly explained 46.4 per cent of the variance in employee performance ($R^2 = .464$; adjusted $R^2 = .453$). Housing programmes had a positive and statistically significant adjusted association with performance ($B = .153$, $\beta = .172$, $t = 2.532$, $p = .012$). Based on the rounded model statistics, housing's unique incremental contribution was approximately 1.8 percentage points of total variance; this is distinct from the overall model R^2 and from the 27.7 per cent bivariate shared variance (r^2) between housing and performance.

The unstandardised coefficient ($B = .153$) indicates that a one-unit increase in the housing-programme score was associated with a .153-unit increase in the employee-performance score, holding health, time-off and recreational programmes constant. The standardised coefficient ($\beta = .172$) indicates a positive contribution in standardised terms. The result was statistically significant at the 5% level ($t = 2.532$, $p = .012$). This coefficient describes the direction and size of housing's adjusted association with performance.

Hypothesis testing

The null hypothesis was: H_{01} : Housing programmes have no statistically significant influence on employee performance. Because the housing coefficient was positive and statistically significant ($B = .153$, $\beta = .172$, $t = 2.532$, $p = .012$), the null hypothesis was rejected at $\alpha = .05$. Given the cross-sectional design, "significant positive association" is the most cautious interpretation; the result does not independently prove a causal effect.

Discussion

The findings show that housing programmes were moderately implemented and were positively associated with employee performance. The comparatively low ratings for maintenance and hygiene identify practical areas for management attention. A housing programme may have limited value if accommodation is available but poorly maintained, unhygienic or difficult to access.

The result is consistent with the resource-based explanation offered by the JD-R model: resources

can help employees meet work goals and manage demands, while the motivational process links resources with engagement and work-related outcomes (Bakker et al., 2023). In this setting, accommodation could reduce some commuting-related barriers and support regular attendance.

Housing remained statistically significant after the health, time-off and recreational programme scores were controlled. The full model explained 46.4 per cent of the variance in employee performance, but this percentage reflects the combined predictors. Since the data were collected at one point in time using questionnaires, common-method effects and other unmeasured factors may influence the estimates. Further longitudinal or mixed-method research could investigate whether specific housing improvements precede changes in attendance, productivity or quality of work.

CONCLUSION AND RECOMMENDATIONS

Conclusion: The study found that housing programmes were moderately implemented and had a positive, statistically significant association with employee performance among Fairtrade-certified flower farms in Nakuru County. The housing coefficient remained significant after controlling for health, time-off and recreational programmes. The findings support treating employee accommodation as a potentially important welfare resource, while avoiding a causal claim that the research design cannot establish. The broader implication of rejecting the null hypothesis is that housing provision and, importantly, the condition of the accommodation merit attention in employee-welfare planning and should be evaluated alongside other organisational resources.

Recommendations: Flower-farm managers should conduct routine inspections of employee accommodation and prioritise timely repairs, hygiene, sanitation, safety, security and accessibility. Workers should be consulted when identifying deficiencies and setting improvement priorities. Management should also document housing-related complaints and repairs and monitor relevant performance indicators such as attendance, punctuality, productivity and quality over time to

assess whether improvements coincide with measurable workplace outcomes.

For policy and certification stakeholders, housing assessments should consider the actual condition and usability of accommodation, not merely whether a

programme exists. Future research should include employee interviews or focus groups to explain which housing features matter most, and longitudinal or comparative designs to test whether housing improvements precede changes in performance.

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