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Evaluating Workers' Wages, Welfare, and Unmet Expectations in Kenya's Cut Flower Industry

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Abstract

This study examines the gap between wages and workers' welfare expectations in Kenya's cut-flower industry. Workers' welfare covers wages and working conditions. The industry is a key contributor to Kenya's export revenue. Despite global competitiveness and steady growth, concerns about labour exploitation and inadequate pay persist among workers. Using a mixed-methods design, the study collected both qualitative and quantitative data. The primary data were gathered from 358 workers in three regions of Kenya that grow cut flowers. The regions were Naivasha, Thika and Nanyuki. The study used descriptive and multivariate analyses to examine wage structures and working hours. The results showed that most workers in the cut flower industry follow the legal eight-hour workday. However, large wage gaps remain between agricultural workers and general workers despite working in the same locality. Only a few workers in the industry engaged in income-generating activities to boost their income. The study found that although wages are central to workers' welfare, pay alone does not fully meet broader welfare expectations shaped by sectoral inequalities and structural wage-setting mechanisms. It concludes that wage disparities between agricultural and general-sector workerspersist across locations, limiting welfare outcomes for workers. The paper provides empirical evidence on cross-sector wage differences and highlights the limitations of wage policies in improving workers' welfare in Kenya's agricultural sector. It calls for policy measures to unify sectoral wage frameworks and enhance enforcement to better support workers' welfare.

Key Words
Cut flower industry;working hours, Agricultural wages; Worker's welfare;Wage disparity, Supplementary Income.

Introduction

Kenya is among the world's leading exporters of cut flowers and a strong competitor in the European cut flower market, accounting for 70% of total exports and ranking among the top

exporters globally alongside Colombia, Ecuador, and the Netherlands (Benoit, 2019; Bermudez & Mumbi, 2024). Kenya is the largest cut-flower producer in Africa, followed by Ethiopia, and the sector represents a significant share of the nation's horticultural exports (Mebrat et al., 2022). The industry's rapid expansion has created employment opportunities, positioning it as a strategic economic sector (Statista Research Department, 2025). Supporting this growth, the Kenya Flower Council (KFC) (2025) notes that Kenya's flower export volume and value increased from 108 billion shillings (approximately 835 million U.S. dollars) in 2024, a slight rise from the 827 million dollars in 2023.

Existing literature reports poor remuneration and working conditions in the cut flower industry. This is often linked to structural inequalities within global value chains and domestic wage-setting mechanisms (Beutler, 2020). Scholars have criticised the industry for paying low wages that do not reflect workers' output. Ankita (2024) and Valerie (2011) argue that workers' welfare on cut-flower farms remains unsatisfactory despite high productivity stemming from their inputs. While these studies emphasise exploitation and low pay, they seldom provide systematic empirical comparisons between agricultural wages and those in the broader sector for similar occupational groups. Furthermore, workers' welfare expectations are often discussed in normative terms, with limited use of measurable indicators directly derived from workers' experiences.

The exploitation of workers, as this study finds, can be defined through Marxist theory as the extraction of surplus value from workers who are paid less than the value of their output, resulting in alienation (Brown, 2014 and Farganis, 2014). Scholars argue that labour exploitation functions within capitalistic structures that enable capital accumulation at workers' expense (Valerie, 2011). Andrees and Belser (2009) place this exploitation within the historical continuum of coerced labour. Exploitation thus endures through systemic economic and social constraints, particularly in developing countries where labour protections remain inherently weak (McDermott, 1997).

This study addresses these gaps by empirically comparing wage structures in the agricultural and general sectors and examining workers' welfare expectations using survey-based indicators across urban, peri-urban, and rural contexts. In doing so, the paper contributes new evidence on whether spatial location influences remuneration outcomes and whether existing wage policies sufficiently align with workers' welfare expectations, as well as the implications for wage policy as outlined by the government every year on May 1st (Labour Day). This day is when workers' welfare issues are meant to be addressed. Therefore, this article assesses the discrepancy between wages and working conditions and workers' expectations of welfare in Kenya's cut flower industry.

Literature Review

The cut flower industry has contributed to Kenya's foreign exchange earnings through its massive exports. According to Riisgaard (2011), the industry continues to be criticised for an unfair working environment and low wages. It is unclear whether this anomaly, in which workers

are not compensated proportionally for the hours worked, is exclusive to the cut flower industry or to the agricultural sector as a whole. This is illustrated in Table 1, which shows the 2015 and 2024 basic minimum consolidated wages for workers in general and in the agricultural sector.Further, Table 1 compares the basic minimum consolidated wages for workers in the general and agricultural sectors in 2015 and 2024, showing the disparity between the two sectors.

Table 1
Comparison between Basic Minimum Wages for Workers in General and the Agricultural Sectorfor the years 2015 and 2024

Occupation	**General sector workers**				**Agriculture Sector workers**	
	Nairobi, Mombasa and Kisumu Cities		All other municipalities and Naivasha, Ruiru and NanyukiTown Councils			
	2015	2024	2015	2024	2015	2024
1. Unskilled employee	10,954.70	16,113.75	10,107.10	14,866.92	5,436.90	8,596.494
2. Night watchman	12,221.10	17,976.54	11,330.10	16,665.96	6,278.80	10,253.06
3. Lorry driver or car driver	18,595.20	27,352.4	17,090.50	25,139.17	7,966.80	22,415.82
4. Clerk	14,173.50	24,818.31	13,259.30	22,689.83	9,808.10	19,346.59

Source: Rok, 2015 and RoK, 2024

In Table 1, the minimum wage for an unskilled employee in the general sector per month was US $125 (16,113.75), whereas in the agricultural sector it was US $66.7 (8,596.494), which is less US $58.2 (RoK, 2024). Therefore, the minimum wage for workers in the agricultural sector is almost half that of workers in the general sector. Workers in the agricultural sector, which includes the cut-flower industry, are paid a lower minimum wage than workers in the general sector, regardless of their work location. Additionally, there is no categorisation of agricultural workers within the agricultural sector, unlike in the general sector, where their workstations are categorised as either in Nairobi, Mombasa, Kisumu, or other regions. Workers in the general sector in the three listed cities in Kenya received higher wages than those working in other regions. Conversely, workers in the agricultural sector received the same wage regardless of whether they worked in cities or other locations. This scenario reflects the state's alienation of agricultural workers from a higher minimum wage, thereby affecting their welfare.

The amount paid to unskilled workers in the agricultural sector per day was US$2.2, slightly below the global poverty line of US$3.00 per day in 2024 for low-income countries (Foster et al., 2025). It is important to note that Kenya's population living with severe poverty is 7.5% less than US$2.19 per day in 2022, including workers in the cut flower industry (Alkire, Kanagaratnam & Suppa, 2024).

This study is guided by Karl Marx's Marxist theory, whichexplains the relationship between the wages paid to workers in the cut flower industry and the exploitation by farm owners. Theory argues that society is characterised by conflicts between the owners of the means of production and workers. According to Hoffman (1975), exploitation of workers occurs because the number of workers seeking employment always exceeds the demand in the job market, thereby challenging the market's capacity to accommodate them. Marx further contends that capitalists consistently pay workers wages far below their true worth. The excess value retained by the capitalists is appropriated as profits. This theory was applied in this study because it explains the exploitation of workers by owners of capital through low wages, far below the US$3.00 global poverty line per day (Foster et al., 2025). The government-mandated basic minimum wage is lower in the agricultural sector than in the general sector, as shown in Table 1. This wage disparity between workers in the general and agricultural sectors shapes the reference point in wage negotiations. Consequently, workers in the agricultural sector are paid lower wages than their counterparts in the general sector working in the same cadre. Agricultural workers earn lower wages than unskilled workers in the general sector, even though they live in the same locality. The social relations between cut-flower workers and capitalists demonstrate the class struggle within the agricultural sector. Workers continue to campaign for better wage packages, while farm owners focus on maximising profits. As a result, the profits generated from the workers' output go to the capitalists, remaining beyond the workers' reach.

According to Kenya's labour laws, workers are required to work 8 hours per day (RoK, 2012). The cut flower industry has been accused of employing workers for more than eight hours without compensating for the extra hours worked (Kaaria, 2022). Kuiper (2023) also recognised long working hours in the cut flower industry as an issue that has become deeply embedded by the owners of capital. However, Kaaria's (2022) and Kuiper's (2023) studies fail to address the cause of this labour issue, even though low wages and extended working hours are forms of exploitation.

Marxist theory suggests that there is exploitation of workers because the number of workers seeking employment always exceeds the demand in the job market, thus choking the market's ability to absorb them. However, today workers are not limited to working in just one sector; they can supplement their income through engagement in other income-generating activities like bodaboda operation (motorcycle rider business) and the service industry, such as cleaning in households, washing, and child daycare services, among other income-earning activities they can participate in when off duty. Marxist theory does not address wage disparities based on the individual worker's level or the regions where labour is offered. This study categorised unskilled workers according to the region where they offered their labour.

Methodology

Research methodology comprises scientific systems that specify the rules and procedures that form the basis of the research, aimed at planning, executing, and interpreting the field data collected (Thomas, 2021). This section covers the study design adopted, study sites, sampling procedures, data collection, and data analysis.

Study Design

This study adopted a mixed research design to examine variations in wages and welfare-related indicators among cut-flower workers across three geographical areas. Mixed methods research involves collecting, analysing, and interpreting both quantitative and qualitative data within a single study or across a series of studies exploring the same underlying phenomenon (Leech, 2009). Consequently, a study employing both qualitative and quantitative approaches is conducted either simultaneously or in sequence. Once a study integrates quantitative and qualitative techniques to any extent, it can no longer be regarded as employing a mono-method design. At this stage, the study is either using a fully mixed design or a partially mixed design. The study adopted a partially mixed-methods approach to collect quantitative data from unskilled workers across the three selected regions. The qualitative data were collected sequentially from key informants.

Study Site

The study was conducted in three major cut flower-producing regions in Kenya: Naivasha (peri-urban), Thika (urban), and Nanyuki (rural). These regions were specifically selected to capture socio-economic diversity while remaining within the same sectoral wage framework applicable to agricultural workers in Kenya.

Sampling Procedures

A total sample of 358 workers was drawn from 13 cut-flower farms across three selected regions. Cluster sampling was used to select three regions from 16 options, including Naivasha, Nanyuki, Nairobi, Thika, Kiambu, Athi River, Kitale, Nakuru, Kericho, Nyandarua, Trans-Nzoia, Uasin Gishu, Machakos, Murang'a, Meru Central, and Embu (Kabiru, 2018). The three selected regions were peri-urban (Naivasha), urban (Thika), and rural (Nanyuki). Proportionate sampling was used to select workers in the cut-flower industry from these regions. In Kenya, there are 60,000 workers in the industry, with the three sampled regions accounting for 48,600 workers. The distribution was Naivasha (30,000), Thika (10,000), and Nanyuki (8600). Proportionate stratified sampling, a probability sampling technique, was used to determine the number of workers from each region, with an added sample size for each area.

At the start of the study, the researcher proposed sampling 300 workers for interviews at cut-flower farms across three regions. The initial sample size of 300 was determined based on available resources and the need to reflect the diversity of the sample from Naivasha, Thika, and Nanyuki. However, during the study, the researcher increased the sample size from 300 to 358 to reduce the margin of sampling error, which was made easier by the data collection process in the regions.

The lowest sample size in a cut flower farm was 26 (twenty-six), while the highest was 30 (thirty) respondents. This aligns with Rudestam and Newton (2014), who state that 20 (twenty) to 30 (thirty) participants make a reasonable sample depending on the population size. The sample size of workers in different areas calculated as shown in equations 1,2 and 3 was as follows: Naivasha (196 workers), Thika (108 workers), and Nanyuki (54 workers). The total

number of sampled workers across the three regions was 358. This sampling method ensured adequate representation of workers from all three regions (Nachmias & Nachmias, 1996).

$$\text{Naivasha:} \quad PSA = \left(\frac{30{,}000}{48{,}600} \times 300\right) + 11 = 196 \qquad \ldots..(1)$$

$$\text{Thika:} \quad PSA = \left(\frac{10{,}000}{48{,}600} \times 300\right) + 46 = 108 \qquad \ldots..(2)$$

$$\text{Nanyuki:} \quad PSA = \left(\frac{8{,}600}{48{,}600} \times 300\right) + 1 = 54 \qquad \ldots..(3)$$

Data Collection

Primary data were collected using a standardised questionnaire administered through face-to-face interviews. The face-to-face mode was employed to increase the response rate and the literacy level among the targeted population. The questionnaire consisted of open-ended questions.The instrument captured information on working hours, wages,perceptions on remuneration adequacy and engagement in supplementary income activities. Common method variances were addressed through procedural remedies that reassured respondents of their anonymity and confidentiality (Podsakoff et al., 2024). The main variable of the study was the discrepancy between wages and workers' welfare, and the sub-constructs were working hours, wages, perceptions of remuneration adequacy, and engagement in supplementary income activities. The questionnaire was pilot-tested prior to full deployment, yielding Cronbach's alpha coefficient of 0.8, which signalled acceptable internal consistency. For example, based on the pretest, only a limited number of revisions were required for the tool. Thus, no major revision was required for the tool.

The key informant guide was used to gather data from three labour union officials from the Kenya Plantation and Agricultural Workers Union (KPAWU) across the three regions involved in the study. These union officials provided information on working hours, workers' remuneration, and other income-generating activities. The researcher conducted key informant interviews. Additionally, the researcher engaged workers from the three sampled regions (Naivasha, Nanyuki, and Thika) in focus group discussions. Three FGDs, each comprising eight workers, both male and female, from different farms within the regions, were held to ensure a balanced presentation of the qualitative data. The members of the FGDs were purposively selected based on their availability and gender representation. The FGDs and KIIs offered qualitative data to complement the quantitative data collected through questionnaires.

Data Analysis

The analysis relied on descriptive statistics, which were appropriate for the snowball sampling technique used to collect data from the selected farm, given the prevailing circumstances. These statistics were used to summarise working hours, wage differentials, and patterns of income supplementation. Qualitative data were analysed thematically to clarify and support the results. It was utilised to explore wage differentiation, working hours, and whether workers had alternative income-generating activities. This aimed to supplement the quantitative data (Rahman, 2016).

The study conducted factor analysis to identify the most appropriate proxy factors representing the latent variables for use in correlation and regression analysis. The factor analysis helps determine the key proxy factors in a model (Cohen et al., 2003). It reduces the number of variables, making the calculation of the correlation matrix easier. The dependent variable, workers' welfare, was represented by seven manifest variables: a) rating of the current wage of workers on the farm (WW1), b) comparison of these workers with those on other farms (WW2), c) provision of health and safety training for workers (WW3), and d) regular increases in workers' wages (WW4). Additional manifest variables included: e) the presence of rapport between workers and employers in the cut flower industry (WW5), and f) whether workers are allowed to join trade unions freely (WW6). Measurement involved selecting the variable with the highest factor loadings or eigenvalues. The predictor variables focused on workers' remuneration, with eight manifest variables. Remuneration, as an independent variable, was also subjected to factor analysis. The aim was to identify a proxy manifest variable that best explains workers' remuneration. These variables were: a) workers' satisfaction with current wages (RW1), b) compensation for extra hours worked (RW2), c) lack of compensation for extra hours (RW3), d) whether a worker is compensated in case of injury while on duty (RW4), e) whether workers' rights are respected by employers (RW5), f) basic wages (RW6), g) housing allowance for workers (RW7), and h) the number of hours worked per day (RW8).

Ethical Consideration

Prior to the field research,permission was sought from the NACOSTI, and a permit was issued. Furthermore, the researcher sought consent from every individual in the cut flower industry who participated in the study. The workers who participated in the study voluntarily provided the information and agreed to its confidentiality, and the interviewee adhered to the rules; as a result, the interviews were conducted in the vicinity of farm management and other participants. The participants' confidentiality was maintained, and they were allowed to exit at any stage of the interview

Validation of Data

The researcher carried out several activities to ensure that the collected data were valid. First, in the field, research assistants were trained and later participated in pre-testing the survey. Pre-testing the survey was used to increase the likelihood of face validity. Piloting took place at a Thika cut-flower farm and at two Naivasha cut-flower farms. The purpose of piloting the research instruments was to enhance their validity. In the field, face-to-face interviews were conducted, where questions were clarified if a respondent failed to understand their meaning. Further questions were addressed in cases of clarity or ambiguity. In some instances, further probing was undertaken. This aimed to test both face validity and content validity. Face validity refers to the likelihood that a question might be misinterpreted, while content validity assesses whether the instrument adequately covers the study or unit of analysis in question (Singleton et al., 1988). After the fieldwork, the data were coded, entered, and cleaned.

Furthermore, for workers who felt uncomfortable being interviewed on the farm, the research team conducted the interviews at a location that was most convenient for them. For example, the team ensured that all respondents were asked before the interview whether they were ready to be interviewed at a specific venue. If the response was negative, they were asked to select a venue that better suited them. Additionally, each respondent from the sample was interviewed alone, away from the other workers.

Multivariate analysis was conducted to identify the key factors influencing workers' welfare. Three types of analysis, namely logit, probit, and OLS (Ordinary Least Squares), were utilised to determine the most effective method for explaining workers' welfare. The logit model explained approximately 23% of the variation in workers' welfare (Y) in the regression model, while the probit model explained about 24%, and the OLS model explained 31%. The OLS was considered the most suitable analysis due to its higher explanatory power. According to Karlson et al. (2012), in OLS, no assumptions are made regarding the distribution of the error term, which limits its applicability, whereas logit assumes data are logistically distributed due to skewness in the population's distribution. Probit, on the other hand, assumes a normally distributed data set. Therefore, the probit regression analysis was chosen because the sample was drawn from a large, normally distributed population. Consequently, probit regression was deemed most likely to yield optimal results in measuring the model's ability to explain the dependent variable (workers' welfare) in relation to remuneration as the independent variable.

Reliability of Data

The pilot study was done to ensure the clarity of the research tools. To assess data reliability, the researcher used Cronbach's alpha coefficient. Nunnally (1978) suggests that a coefficient of 0.7 is acceptable, while Sekaran and Roger (2016) state that a coefficient between 0.5 and 0.8 is adequate. The closer this coefficient is to 1, the greater the internal consistency; the closer it is to 0, the less the internal consistency. There were 164 variables in total. The researcher removed nine qualitative variables from the data. The remaining variables were then measured using SPSS software. The standardised Cronbach's alpha is given by

$$\alpha = \frac{N\overline{C}}{\overline{V} + (N-1)\overline{C}} \qquad \text{.....(4)}$$

Where N is equal to the number of items, C bar is the average inter-item covariance among the items and V bar equals the average variance. The Alpha was 0.774 (77.4%) while the number of observations was 155 respondents. The Cronbach's alpha coefficient was above 0.7, showing a good level of internal consistency of the data. The reliability test was done on both the independent and dependent variables.

Results

The study sought to establish working hours, wage differential between sectors and regions, and supplementary income activities**.** According to Chapter Four of the Bill of Rights, Article

41(2a), in the Constitution of Kenya (2010), a worker is entitled to fair remuneration and fair working conditions (ROK, 2010)

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Table 2
Social Demographic Characteristics of Cut Flower Workers

Age	**Male**	**Female**	**Total**
Below 18years	0 (0.0%)	1 (0.7%)	1 (0.3%)
18yrs-27yrs	74 (34.9%)	48 (39.3%)	122 (34.1%)
28yrs-37yrs	80 (37.7%)	59 (40.2%)	139 (38.8%)
38yrs-47yrs	46 (21.7%)	33 (22.6%)	79 (22.1%)
48yrs-57yrs	11 (5.2%)	5 (3.4%)	16 (4.5%)
Above 58years	1 (0.6%)	0 (0.0%)	1 (0.3%)
Total	**212 (59.2%)**	**146 (40.8%)**	**358 (100.0%)**

Source: Field data 2015

Data in Table 2 show that the majority of workers (38.8%) were in the age category 28-37 years, whereas the fewest were above 58 years. Further, the data show that the majority of employees in the cut flower farms are young, aged 18-37 years (73.5%). This age category comprises a young and energetic population for a labour-intensive industry. The high number of workers in the age brackets 18 -27 years (34.1%) and 28-37 years (38.8%) may be explained by the pressure in the job market, which makes it harder to secure their preferred jobs.

Working Hours

Most respondents (82.4%) reported working eight-hour shifts, aligned with Kenya's labour regulations. A smaller portion (12%) reported working fewer than 8 hours, while 5.6% reported working more than 8 hours. These findings suggest improved compliance with statutory hours-of-work provisions compared to prior studies. This was confirmed by Beutler (2020), who cited workers' negative experiences with working hours. According to a key informant, workers are sometimes forced to work long hours without compensation. One of the respondents confirmed that they were forced to work for long hours, especially when there was a delivery of flowers to the airport with minimal compensation.

Wage Differential between Sectors and Regions.

Analysis of statutory wage orders reveals persistent disparities between agricultural and general-sector wages for comparable occupational categories, as shown in the literature review (Table 1). There are two categories of workers: general, earning a minimum wage of Kshs 16,113.75, compared to the agricultural sector, which earns Kshs 8,596.494 (RoK, 2024). Workers in the cut flower industry are classified as part of the agricultural sector; thus, they are subject to lower minimum wages than their counterparts in other sectors, regardless of geographical location. This uniformity across regions accentuates the structural nature of sector-based wage differentials, as shown in Table 3.

Table 3
Workers' wages and their location

Workers' wages	**Location of the farm**			**Total**
	Nanyuki	**Naivasha**	**Thika**	
Less than KShs. 5001	0 (0.0%)	29 (14.8%)	3 (2.8%)	32 (8.9 %)
KShs. 5001-KShs. 7000	11 (20.4%)	41 (20.9%)	42 (38.9%)	94 (26.3%)
KShs. 7001-9000	32 (59.3%)	28 (14.3%)	44 (40.7%)	104 (29.1%)
KShs. 9001-11000	9 (16.7%)	62 (31.6%)	10 (9.3%)	81 (22.6%)
KShs. 11001-13000	1 (1.9%)	16 (8.2%)	4 (3.7%)	21 (5.9%)
KShs. 13001-15000	1 (1.9%)	16 (8.2%)	4 (3.7%)	13 (3.6%)
more than KShs. 15000	0 (0.0%)	10 (5.1%)	3 (2.8%)	13 (3.6%)
Total	54 (15.1%)	196 (54.7%)	108 (30.2%)	358 (100.0%)
Mean minimum wage	Kshs8360.19	Kshs9049.33	Kshs7904.68	Kshs8600.06
Pearson Chi-Square=49.225	df=6	Asymp. Sig. (2-sided)=0.0001		
Likelihood Ratio=56.729	df=6	Asymp. Sig. (2-sided)=0.0001		

Source: Field data 2015

The meanmonthly wage for the 358 workers covered across the three regions was Kshs 8,600.06, which was above the government's stipulated minimum monthly wage of Kshs 8,596.494 for the agricultural sector in 2024 (RoK, 2024). This shows that, even though the data were collected in 2017/2018, little change has occurred.

The finding was consistent with findings by Kazimierczuk et al. (2018) and Kuiper (2019), who noted that workers were paid considerably more than the statutory minimum wage. In this study, workers in Thika, despite being in an urban area, had the lowest mean monthly wage of Kshs 7904.68, while workers in selected Nanyuki flower farms had a mean monthly wage of Kshs 8360.19. The average minimum wage in Naivasha was the highest at Kshs 9049.33, far above the government-stipulated minimum wage in 2024. Thus, the workers in the flower farms are paid slightly higher wages than the stipulated minimum wage. The findings seemed to contradict the perception in the cut flower industry, as expressed in previous studies,that workers are poorly remunerated (Kuiper, 2023).

Supplementary Income Activities

Only 19% of respondents reported engaging in supplementary income-generating activities, while 81% relied entirely on wages from cut-flower employment. The rural farm (Nanyuki) and urban farm (Thika) had 21% and 38% of the workers interviewed, respectively, with supplementary income, while the peri-urban farm(Naivasha) had 41%. This shows that the majority of workers on cut-flower farms don't engage in other income-generating activities. A female respondent said, "We are usually very tired and exhausted after working for 8 continuous hours in the cut flower farm; *thus, I opt to rest to regain the lost energy and prepare for the next shift. I have to carry out the daily chores in the household as failure would affect other members of my household (my children)*". Another male respondent reported that "*supplementary income activities like*

plumbing, clearing the ground, digging, fencing among others where present, are irregular and often insufficient to significantly improve the household welfare and thus one opts to stay away rather than get poor pay while working in peoples households."

In both female and male Focus Group Discussions, the participants reported that some workers engaged in various activities to supplement their income, like:

> *selling sukuma wiki, retail shops, embroidery and food selling, especially tea and coffee, plaiting and braiding hairstyles on other women, Boda boda riding, either using motorcycles or bicycles, being employed as watchmen, being touts in land transport lorries, loading and unloading building materials like stone, sand, etc. Some women were involved in washing clothes in different houses, tailoring, and commercial sex work. Specifically, there was an allegation that commercial sex was rampant in the cut flower farms.*

Even though the study suggested that most unskilled workers lacked alternative income, Kuiper (2023) argued that their wages were insufficient to support them without an alternative source of funds, such as a loan facility.

In measuring the dependent variable (workers' welfare), only one factor was considered, which had the highest eigenvalue of 1.94879. This shows that one factor can explain the dependent variables better than other factors. The following were the factor loadings of the manifest variable in ascending order: WW5 (0.6379), WW3 (0.6023), WW4 (0.5815), WW2 (0.5440), WW1 (0.5305) and WW6 (0.5134) (see Appendix 6). The proxy manifest variable with the highest selected factor loading was WW5, with a loading of 0.6379. Thus, in the subsequent analysis, workers' welfare was represented by variable WW5. The independent variable, workers' remuneration, was the only factor with the highest eigenvalues of 1.95163 and was considered. The following were the factor loadings of the manifest variable in ascending order: RW2 (0.827), RW3 (-0.786) and RW4 (0.5257). Other manifest variables had factor loadings below 0.5, which were deemed low. Therefore, the proxy manifest variable selected was RW2 with the highest factor loadings of 0.827.

The workers' welfare dummy variable was defined as 1 = favourable workers' welfare, 0 = otherwise, and was represented by the proxy variable WW5.
The following dummy variables for the independent variables were defined, whereas the workers' remuneration dummy variable was defined as 1=high, 0=otherwise. The variable was represented by a proxy variable, RW2, as shown in Table 4. this study employed correlation analysis to examine the presence and strength of associations between variables.

a) In bivariate analysis, this studyemployed correlation analysis to examine the presence, magnitude, and direction of associations between the study's dependent variable (workers' welfare) and the study's independent variable (workers' remuneration). The association was measured using Pearson Correlation (r). Although employees' wages are expected to enhance workers' welfare substantially, the findings in this study established that workers' wages enhanced workers' welfare

moderately, r(356) = 0.35, p < .001. This finding shows that employees' remuneration and workers' welfare are positively moderately correlated, such that as wages increase, workers' welfare improves and vice versa. Moreover, in multivariate analysis, using the probit regression analysis, this study attempted to measure the probability effect of the remuneration of workers, which is an independent variable, on the study's dependent variable (workers' welfare).

Table 4
Probit Regression Results: Dependent variable is WW5

Variables	**Probit Indices (Workers Welfare Index)**				**Marginal Effects (Change in probability that workers are better off)**			
WW5	Coef.	Std. Err.	Z	P>z	dy/dx	Std. Err.	Z	P>z
RW2	0.158	0.0787	2.01	0.044	0.0620	0.0308	2.01	0.044
_cons	-1.141	0.3065	-3.72	0.000				
Number of obs = 358 LR X^2 = 120.49 Prob > X^2 =0.000 Pseudo R^2 = 0.2466								

Source: Field data (2015)

The research further examined the effect of workers' remuneration on their welfare. The proxy manifest variable used for workers' remuneration was RW2. Previous studies including Freeman et al. (2007), Dolan et al. (2003), and Smith et al. (2004) indicate that workers' wages have remained low for a long time, thus impacting their welfare. Remuneration had a minimal effect of 0.158. A one-unit increase in workers' remuneration improves their welfare by 0.158. The likelihood of workers being better off following a one-unit increase in remuneration increases by 6.2%. Therefore, the direct effect of workers' remuneration on their welfare was less significant than the impact of the state on the same. Consequently, increasing minimum wages alone is insufficient to significantly enhance workers' welfare. Other factors, such as working conditions beyond monetary aspects (Dolan et al., 2003), also influence workers' welfare.The study finding was that a 1% change in workers' wages led to a 6% change in workers' welfare. Thus, workers' wages have minimal effects on workers' welfare.

Discussions

The majority of people working in the cut flower industry are younger, energetic individuals, as the industry is labour-intensive and jobs are readily available. In addition, people over 48 years old rarely engage in labour-intensive work or in job engagement, which might affect their health. Cut-flower industry jobs involve the use of chemicals that may be hazardous to older adults.
The finding that most workers adhere to the statutory eight-hour workday demonstrates an improvement in labour regulation enforcement compared to earlier findings (Odhong' and Omolo, 2014). However, from a Marxist perspective, regulated working hours do not inherently eliminate exploitation. The study's findings align with Beutler (2020), who affirms that working conditions are a key issue in the collective bargaining agreement (CBA) between farm workers and unions. They also concur with Beyene (2014), who argued that exploitation is primarily

rooted in the extraction of surplus value through wage-setting rather than in hours worked. The improvement in compliance with working hours may thus be understood as a partial regulatory success that coexists with deeper structural inequalities in remuneration.

The persistent wage gap between the agricultural and general sectors illustrates a form of structural exploitation aligned with Marxist views of capitalist labour relations. Despite engaging in similar work in the same geographic areas, cut flower workers continue to receive low pay, determined by government wage bands across both the general and agricultural sectors. This supports arguments that exploitation in modern capitalist systems is maintained through firm-level practices and state-sanctioned wage policies that distinguish workers by sector (Mlynska et al., 2015). The findings concur with Kuiper (2023), who notes that workers in the cut flower industry earn wages insufficient to sustain them. While some scholars focus on global value chains and multinational companies as main causes of low wages, the findings here emphasise the key role of domestic wage policies in perpetuating these disparities.

The limited engagement in supplementary income-generating activities further complicates prevailing narratives in the literature that portray widespread income diversification as a coping strategy among cut flower workers (Plucking et. al., 2015). While earlier studies document extensive informal economic participation, this study suggests that such activities are neither universal nor reliably available to most workers. From a political economy perspective, this indicates constrained agency among workers whose wages are insufficient yet whose capacity to supplement income is limited by time, capital, and opportunity structures.

Overall, the findings suggest that workers' welfare expectations are shaped less by individual employment conditions than by broader structural arrangements governing wages in the agricultural sector. While Marxist theory emphasises exploitation through surplus appropriation, the evidence here points to the state's role in institutionalising wage differentials that sustain welfare constraints (Kuiper, 2023). This underlines the need to move beyond firm-level interventions and to critically reassess sectoral wage-setting frameworks as a central mechanism through which labour exploitation and welfare inequality persist.Kaaria (2022) affirmed that workers were lamenting due to low wages, underpayment, and long working hours, which are characteristics of exploitation as discussed in Marxist theory. In addition, the findings align with Ankita (2024), who affirms that workers on flower farms did not receive remuneration for extra hours worked. Thus, the exploitation of workers by owners of capital has been a feature of the cut flower industry.

Using correlation analysis, the study attempted to measure the influence of workers remuneration on welfare. The results of correlation showed that workers wage was moderately influenced at r = +0.35. Thus, the employees' wage and workers' welfare are positively correlated such that increase of workers' wage led to improve of their welfare. In probit regression analysis, the study found that the workers' wage effects on workers welfare was at 6%. In this case, a unit change in workers remuneration, led to probability change of 6% on workers' welfare. Thus, the workers remuneration did not heavily influence the welfare as most people could have expected which means that there are other variables which play a great role in workers' welfare.

Conclusion

This study examined whether wages align with workers' expectations of welfare. It found that the majority of workers (82.4%) on selected cut flower farms worked eight hours a day, as required by labour law. This contrasts with previous studies (Kuiper, 2023), which reported that workers in the cut flower industry were overworked. The study shows that although statutory working-hour regulations are largely observed in Kenya's cut flower industry, wage disparities between the agricultural and general sectors persist. These disparities persist regardless of location and limitworkers' welfare outcomes. The findings suggest that increasing wages alone may not be enough to meet workers' welfare expectations without broader reforms to sectoral wage-setting mechanisms (Rok, 2024). Policy efforts to unify wage frameworks and improve enforcement are therefore vital to enhancing welfare outcomes for agricultural workers.

Recommendations

Based on the findings, the government stipulated that the minimum wage for workers in the agricultural sector is lower than that of their counterparts in the general sector. As a result, the bargaining threshold of workers in the agricultural sector, where the cut flower industry is domiciled, will always be at a disadvantage. Therefore, the state should narrow the gap between the minimum wage and the living wage of the unskilled workers in the agricultural sector which houses the cut flower workers by raising their legislated minimum wage.to match that of their counterparts in the general sector. Further, the legislated government wage is used as the basis of Collective Bargaining Agreement negotiation for workers. Thus, the state should harmonize the minimum wage of workers which exists in the agricultural and general sector to curb the disparity encountered by workers' wage.

The majority of workers did not engage in supplementary income-generating activities; this may leave households vulnerable to budgetshocks. Thus, the workers should be trained to utilise their time to generate additional income through other income-generating activities.

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