

Original Research Article

Determinants of compliance to occupational safety and health standards in food manufacturing industries, Thika Sub-County, Kiambu County, Kenya

Teresiah W. Njoroge*, Alfred O. Odongo, Joseph M. Muchiri

Department of Community Health, Epidemiology and Biostatistics, Mount Kenya University, Thika, Kenya

Received: 11 January 2025

Revised: 03 March 2025

Accepted: 07 March 2025

*Correspondence:

Dr. Teresiah W. Njoroge,

E-mail: terenjoroge@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: It is mandatory for all workplaces to prioritize the safety and health of their employees by adhering to OSH rules and regulations to prevent work-related illnesses, accidents, injuries, and fatalities. The study aimed to assess the determinants of compliance with occupational safety and health standards among employees in food manufacturing industries in Thika sub-county, Kiambu County, Kenya.

Methods: The research used an analytical cross-sectional study design. Stratified sampling techniques were utilized to select study respondents for this research. The chi-square test was used for bivariate analysis, and Binary logistic regression was also applied for determinants found to be significant in bivariate analysis. The cutoff for statistical significance was $p < 0.05$. Qualitative data was analyzed thematically.

Results: From this study, the compliance rate to occupational safety and health standards was 76.5%. the provision of PPEs (OR=2, 95%CI=0.29-0.96), having a working experience of 1-4 years (OR=5.9, 95%CI=0.06-0.49) increased the odds of complying with occupational safety and health standards while being a male (OR=2.1, 95%CI=1.12-3.92) and having a primary level of education (OR=8.3%, 95%CI=2.28-30.53) reduced the odds of complying with occupational safety and health standards.

Conclusions: The compliance rate with occupational safety and health standards was 76.5%. From this study, the provision of PPEs, and having a working experience of 1-4 years increased the odds of complying with occupational safety and health standards while being a male and having a primary level of education reduced the odds of complying with occupational safety and health standards.

Keywords: Compliance, Food manufacturing industries, Safety, and Workplace

INTRODUCTION

Compliance with occupational safety and health (OSH) standards is conforming to or being under a rule/guideline such as a specific policy legislation or law.¹ With great economic benefit played by food manufacturing industries highly contributes to GDP. Nevertheless, notwithstanding the substantial economic advantages of the worldwide food manufacturing industries, reports indicate that underinvesting in workplace safety and health has a financial cost.² According to a 2017 study,

2.78 million deaths among employees take place each year due to factors associated with their jobs. Out of them, 2.4 million deaths, or 86.3 percent, were caused by occupational diseases, while 380,000 deaths, or 13.7%, were caused by occupational accidents. Additionally, there were 3.74 million non-fatal accidents, and 123 million DALYs were lost because of illnesses, disorders, and work-related injuries.³

DALYs are a composite measure, based on reported cases, of the global burden of diseases (GBD) and

financial damage. All work-related illnesses, harm, and illnesses contributed to 2020 GBD, which was 4.94%. These disturbing figures suggest that over 3.2 billion workers do not have sufficient access to the entire spectrum of occupational safety and health services (IHME/GDB Risk Factors and Collaborators 2020). Furthermore, most workers worldwide do not have conditions of employment that fulfill the requirements set by the UN's International Labor Organization, even though the majority of countries have established sensible laws and enforcement mechanisms.² ILO estimates show that the burden of occupational diseases and deaths varies around the world, with Sub-Africa accounting for 11.8% of cases per year as a result of subpar OSH standards compliance.⁴

Kenya has a population of 47.5 million, according to the most recent census that was done.⁵ 18 million people are in the labor force, of which 3 million work in the official economy and 15 million in the unorganized one.⁵ Only 29% of the technical capacity to evaluate the OSH policy's 2007 inspection of 140,000 establishments for compliance with OSHA requirements is inadequate.⁶ In addition, there are certain implementation gaps and difficulties in occupational safety and health, which limits coverage to only 2.8% of workplaces (4,000), leaving a significant portion (97.1%) uninspected each year due to staffing issues. Due to the insufficient inspection coverage, there is a culture of OSH standard non-compliance.⁶ When compared to other developed nations, Kenya's workplace application of occupational safety and health requirements is utterly appalling.⁷ According to estimates, there were 6796 work-related accidents in Kenya in 2015.⁸

Kiambu County was included as one of the afflicted counties in a report on the first quarter of 2015 that was completed.⁹ According to a survey from 2014, there were 58 industries in the Thika sub-county, and 32% of the workers there claimed falls, wounds, and burns as the cause of the accident.¹⁰ Despite this, there is a dearth of information available regarding the degree of adherence to workplace health and safety laws in food production companies, especially in the Thika sub-county.

The measures implemented to maintain the workplace's security are what ultimately determine its level of safety. Collaboration between management as well as stakeholders is necessary to enhance workplace safety. OSHA 2007 compliance rates for Kenyan workplaces, however, have not been adequately disclosed. Most workers in the food production industry are vulnerable to workplace mishaps, and neither employers nor employees prioritize employee health and safety. This study focused on determinants of compliance with occupational safety and health standards among employees in food manufacturing industries in the Thika sub-county of Kiambu County, Kenya.

This study aimed to assess the determinants of compliance with occupational safety and health standards in food manufacturing industries in the Thika sub-county, Kiambu County, Kenya

Specific objectives are follows: 1) To determine the level of compliance among employees to occupational safety and health standards in food manufacturing industries in Thika Sub-county Kiambu county. 2) To assess the sociodemographic determinants of compliance to occupational safety and health standards among employees in food manufacturing industries in Thika Sub-county Kiambu county. 3) To evaluate the organizational determinants of compliance to occupational safety and health standard among employees in food manufacturing industries in Thika Sub-county Kiambu County. 4) To assess the level of awareness on occupational safety and health standards among employees in food manufacturing industries in Thika Sub-county, Kiambu County.

METHODS

Study design

To conduct the targeted research on assessing the level of Occupational Safety and Health Standards compliance in food manufacturing industries in Thika sub-county, Kiambu County. The research study used an analytical cross-sectional study design. Both qualitative and quantitative data were used to gather data as well as for triangulation purposes.

Study area

Thika Sub-county of Kiambu County served as the site of the research study. Kiambu borders the following counties. Nairobi and Kajiado to the south; Machakos to the east; Muranga to the north and northeast; Nyandarua to the north-west; and Nakuru to the west. The Sub-County of Thika town is industrial. It has many different industries, including the textile, bakery, food and beverage, steel, chemical, and pharmaceutical industries, as well as the manufacturers of motor vehicle assemblies and BAT manufacturing. As a result, the Sub-County has a high concentration of food manufacturing industries roughly 43 out of 87 industries in the entire Kiambu County which highlights the significance of carrying out this kind of investigation in this developed sub-county.

Study period

The study took place from October 2023 to October 2024 for a span of one year from proposal writing to final thesis and results presentation.

Study population

Workers in the chosen food production industries who had been employed for more than six months made up the

study population, and employers as well as the public health officer and workplace safety officers served as the primary key informants for this study.

Sample size determination

Using Yamane's formula, a sample size of 285 study respondents was generated from 1524 employees working in the selected food industries as shown below

$$n = \frac{N}{1 + N(e)^2}$$

Whereby;

$$n = \frac{1524}{1 + 1524(0.05)^2}$$

N=was the total number of employees (N=1524, obtained from Thika Sub-County Public Health Office), e= is the degree of precision. (0.05), then n was 285 study participants.

Sampling technique

The study used a stratified sampling technique to create industry strata for the food manufacturing industries. The Public Health Office provided the total amount of industries that made up the sampling frame while the strata were industries that produced the same product. Employees from the sampling frame were also sampled using a probability proportional sampling technique, and individuals from the industries were sampled using simple random sampling. Several key informants' interviews were conducted whereby the key informants were purposively selected. The key informants were the employers, the County Occupational Safety Officer, and the Sub County Public Health Office.

Data collection tools and procedures

A self-administered, structured questionnaire was utilized to gather quantitative data, where section A of the questionnaire captured data on the level of compliance among employees to occupational safety and health standards, Section B on Sociodemographic factors influencing compliance with occupational safety and health standards, Section C on organizational factors influencing compliance with occupational safety and health standards while section D captured data on awareness of OSHA standards

Statistical analysis

The statistical computer program Statistical Package for Social Studies (SPSS version 26.0) was used to clean, code, and analyze the data acquired for this study. To describe the categorical data frequencies and percentages were employed. Awareness of occupational safety and

health standards was evaluated using a binary scale those who answered yes scored 1 and those with a no scored a zero. To assess the degree of adherence to Occupational Safety and Health Standards, a fifteen-score scale was used. A score of ten or higher on the OSHA score scale was considered to comply with the standards for occupational safety and health, while a score of less than ten was considered to be out of compliance. Conversely, a score below ten indicated non-compliance with OSHA's standards for occupational safety and health. The output of descriptive, categorical variables was described in frequency tables and pie charts. The chi-square test was applied to assess for the relationship between the dependent and independent variables. With a significance level set as a p-value of ≤ 0.05 . Binary logistic regression was also applied for determinants found to be significant in bivariate analysis. Qualitative data recorded was transcribed and analyzed thematically using NVIVO version 10.

Ethical consideration

The Mount Kenya University's ethics and review committee as well as The National Commission for Science, Technology and Innovation (NACOSTI) provided a research permit (NACOSTI/P/23/31259). The county Government of Kiambu Department of Public Health and Sanitation provided an approval letter before the research could begin. Before obtaining consent, the researcher described the study's goals and reassured participants that the information they provided would be kept private by asking them not to share their names. After getting written or thumbprint approval from the respondents, the questionnaires were given to them. The respondents' participation in the study was completely voluntary, and to protect their privacy, names, and other identifiers were not utilized when collecting data. The researcher made sure that all data was collected, treated with absolute confidentiality, and used solely for study purposes. The participant had the option to exit from the study.

RESULTS

Level of compliance among employees with occupational safety and health standards

The occupational safety and health standard scale of compliance was used to evaluate the overall degree of compliance among the employees. To assess the degree of adherence to Occupational Safety and Health Standards, a fifteen-score scale was used. A score of ten or higher on the OSHA score scale was considered to comply with the standards for occupational safety and health, while a score of less than ten was considered to be out of compliance. Conversely, a score below ten indicated non-compliance with OSHA's standards for occupational safety and health. As indicated in Figure 1 below, the compliance rate with occupational safety and health standards was 76.5% (Figure 1).

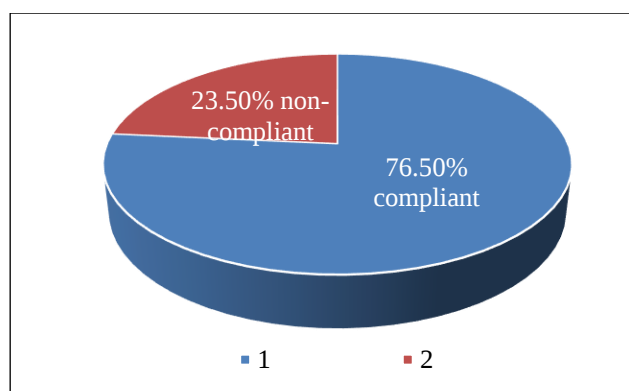


Figure 1: Compliance with occupational safety and health standards.

Social demographic characteristics of the study respondents

Descriptive statistics about the social and demographic traits of the study participants are shown in Table 1 below. More than half (52.3%) of the study participants were aged between 25-30 years while close to half (43.9%) of the study participants had attained a vocational education level qualification. More than a quarter (38.2%) of the study participants were earning between 10001-20000 Kenyan shillings while only a few (11.2%) of the study partakers were earning more than 40000 Kenyan shillings. the majority (62.1%) of the study participants in this study were on a contractual term of employment while on the contrary, more than a quarter (37.1%) of the study respondents were on a permanent term of employment. More than half (51.6%) of the study respondents were males while close to half (48.4%) of the study respondents were females. More than a quarter (39.3%) of the study participants had 5-8 years of working experience while only a few (9.5%) of the study participants had a working experience of more than nine years (Table 1).

Sociodemographic factors influencing compliance with occupational safety and health standards

In the social demographic factor, the following variables were found to be statistically significantly associated with compliance with occupational safety and health standards; education level of the study respondents ($\chi^2=25.69$, $df=3$, $p\leq 0.001$), term of employment ($\chi^2=4.53$, $df=1$, $p=0.03$), gender of the study participant ($\chi^2=8.519$, $df=1$, $p=0.004$), years of work experience ($\chi^2=23.19$, $df=3$, $p\leq 0.001$) Consequently, binary logistic regression analysis was performed on them. Compliance with occupational safety and health standards was not statistically significantly associated with age of the study respondent ($\chi^2=1.62$, $df=3$, $p=0.66$) and income level of the study respondents ($\chi^2=25.56$, $df=4$, $p=0.63$).

As indicated in Table 2 below, study participants with a primary level of education were 8.3 times less likely to

comply with occupational safety and health standards compared to those who had a tertiary level of education. males were 2 times less likely to comply with occupational safety and health standards as compared to females. Furthermore, workers with 1-4 years of work experience were 5.9 more likely to comply with occupational safety and health standards as compared to workers with over 9 years of work experience (Table 2).

Table 1: Descriptive statistics on social demographic characteristics.

Independent variables	Categories	Frequencies	Valid percentage
Age of the participant	19-24	61	21.4
	25-30	149	52.3
	31-36	28	9.8
	43-48	47	16.5
Education level	primary	46	16.1
	secondary	80	28.1
	vocational	125	43.9
	Tertiary education	34	11.9
Income level	0-10000	34	11.9
	10001-20000	109	38.2
	20001-30000	22	7.7
	30001-40000	88	30.9
	Above 40000	32	11.2
Term of employment	Permanent	108	37.9
	contractual	177	62.1
Gender	male	147	51.6
	female	138	48.4
Years of work experience	<1	57	20
	1-4	89	31.2
	5-8	112	39.3
	>9	27	9.5

Organizational factors influencing compliance with occupational safety and health standards

Concerning organizational factors, the following variables were found to be statistically significantly associated with compliance with occupational safety and health standards; provision of PPEs ($\chi^2=6.17$, $df=1$, $p=0.01$), presence of a safe workplace ($\chi^2=18.32$, $df=1$, $p<0.001$), staff participation in OSHA matters ($\chi^2=4.8$, $df=1$, $p=0.03$) and presence of a general register ($\chi^2=4.8$, $df=1$, $p=0.03$), Consequently, binary logistic regression analysis was performed on them. Compliance with occupational safety and health standards was not statistically significantly associated with the provision of first Aid equipment ($\chi^2=2.52$, $df=1$, $p=0.11$) and the presence of firefighting equipment ($\chi^2=0.41$, $df=1$, $p=0.52$).

These findings were not consistent with the qualitative data as one of the key informants noted that:

“Firefighting equipment, including fire extinguishers, hoses, and fire blankets, enhances the workplace’s

emergency preparedness. Having these resources readily available ensures that employees can respond quickly and effectively in the event of a fire, minimizing potential damage and injuries.....”(Key Informant 3).

Table 2: Binary logistic regression analysis on sociodemographic factors influencing compliance with occupational safety and health standards.

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1 ^a	What is your education level		18.890	3	0.000			
	Primary	2.122	0.662	10.288	1	0.001	8.348	30.528
	secondary	1.308	0.644	4.119	1	0.042	3.698	13.074
	Vocational	0.500	0.630	.628	1	0.428	1.648	5.667
	Tertiary					ref		
	Gender	0.741	0.320	5.369	1	0.020	2.097	3.924
	Female					ref		
	Years of work experience		16.900	3	0.001			
	<1	2.506	0.650	14.858	1	0.000	0.082	0.292
	1-4	-1.730	0.524	10.913	1	0.001	5.9	0.063
	5-8	-1.592	0.503	10.023	1	0.002	5	0.076
	>9					ref		
	Term of employment	-0.578	0.337	2.942	1	0.086	0.561	1.086
	Contractual					ref		
	Constant	-0.867	0.694	1.563	1	0.211	0.420	

Table 3: Binary logistic regression analysis on organization factors influencing compliance with occupational safety and health standards.

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1 ^a	Provision of PPEs	-0.625	0.300	4.350	1	0.037	2	0.297
	No provision of PPEs					ref		0.963
	Provision of a safe workplace	-1.114	0.300	13.791	1	0.000	3	0.182
	Absence of safe workplace					ref		0.591
	Copy of general register	-0.526	0.322	2.671	1	0.102	0.591	0.314
	Copy absent					ref		1.111
	Absence of Staff participation in OSHA matters	0.638	0.307	4.334	1	0.037	1.893	1.038
	Staff participation in OSHA matters					ref		3.452
	Constant	-0.131	0.311	0.178	1	0.673	0.877	

As indicated in Table 3, the provision of PPES increased the odds of complying with occupational safety and health standards by 2. The presence of a safe workplace increased the odds of complying with occupational safety and health standards by 3. Furthermore, study participants who reported not participating in OSHA matters were 1.9 times less likely to comply with occupational safety and health standards (Table 3).

Bivariate analysis on awareness of OSHA standards influence on compliance with occupational safety and health standards

There was a statistically significant association when the chi-square test for independence was done between awareness of OSHA standards and compliance with occupational safety and health standards ($\chi^2=4.82$, $df=1$, $p=0.03$). as indicated in Table 4, study respondents who reported awareness of OSHA standards were 2 times

more likely to comply with occupational safety and health standards.

These findings were also in agreement with the qualitative data where one of the key informants noted that:

“OSHA standards are legally mandated, and awareness of these regulations ensures that employers understand their legal obligations to provide a safe and healthy working environment. This awareness motivates organizations to comply with the law to avoid legal consequences such as fines, penalties, and potential legal action....” (Key Informant 6) (Table 4).

Table 4: Binary logistic regression analysis on how awareness of OSHA standards influences compliance with occupational safety and health standards.

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1 ^a	OSHA standards awareness	-0.625	0.287	4.75	1	0.02	2	0.305	0.939
	Not aware						ref		
	Constant	-0.788	0.220	12.82	1	0.000	0.455		

DISCUSSION

The compliance rate to occupational safety and health standards was 76.5% which was way low compared to the Occupational Safety and Health standards target compliance rate of 100%. The findings from this study were close to those of a study done in Ethiopia.¹¹ However, another study carried out in Uganda recorded a higher average compliance rate of 95.2%.¹² The difference in recorded compliance rates with occupational safety and health standards could be linked to differences in sampling procedures, different study populations, and different study settings.

Study participants with a primary level of education were 8.3 times less likely to comply with occupational safety and health standards compared to those who had a tertiary level of education and the possible reason could be linked to a lack of sufficient knowledge on awareness of occupational safety and health matters. The findings from this study were in agreement with two other studies carried out in Kenya and Ethiopia.^{13,14} Males were 2 times less likely to comply with occupational safety and health standards. This could be linked to differences in risk perception. Males are more likely to assume risks differently as compared to females and this can be influenced by factors such as personality and experience. Another study carried out in India was contrary to these findings.¹⁵ Workers with 1-4 years of work experience were 5.9 more likely to comply with occupational safety and health standards as compared to workers with over 9 years of work experience. New employees typically undergo orientation and onboarding programs that include specific training on safety procedures and protocols. The results from this research were concurrent with those of a study done in Malaysia.¹⁶ However, another study carried out in Kenya was contrary to these.¹⁷

The provision of PPES increased the odds of complying with occupational safety and health standards by 2. PPEs are tailored to specific workplace hazards, such as head

protection, eye protection, respiratory protection, and more. Providing appropriate PPE ensures that workers are equipped to mitigate the risks associated with their particular tasks or environments. The findings from this study were in agreement with those of two other studies done in Malaysia.^{18,19} The presence of a safe workplace increased the odds of complying with occupational safety and health standards by 3. Establishing and maintaining a safe workplace is a legal obligation for employers. Compliance with OSH regulations is crucial to avoiding penalties and legal consequences. Organizations that prioritize safety demonstrate adherence to legal standards. Another systematic review was contrary to these findings.²⁰

Study participants who reported not participating in OSHA matters were 1.9 times less likely to comply with occupational safety and health standards. When employees actively participate in safety discussions, training sessions, and safety committees, they develop a sense of ownership in maintaining a safe work environment. This sense of responsibility promotes compliance with OSH standards as employees are personally invested in safety measures. The findings from this study were in agreement with those of a study carried out in Ghana.²¹ However, another study carried out in Ethiopia was contrary to these findings.¹³ Study participants who reported awareness of OSHA standards were 2 times more likely to comply with occupational safety and health standards. Awareness of OSHA standards emphasizes the importance of maintaining accurate records and documentation, as required by regulations. The findings from this study were in agreement with those two other studies carried out in Italy and Nepal, but contrary to those of a systematic review carried out in LMICs.^{22,23,20}

This study has few limitations. The standards for workplace health and safety in food production industries are poorly documented. However, this was avoided by utilizing public health officers data on workplace safety and health as well as occupational safety and health

experts. Recall bias was overcome by a clear definition of the research and the use of random sampling techniques to gather information. Time limit for those who were working night shifts which was overcome by interviewing them before shift starts or after the shift.

CONCLUSION

From this study, the compliance rate to Occupational Safety and Health Standards was 76.5% which was way low compared to the Occupational Safety and Health Standards target compliance rate of 100%. On sociodemographic determinants of compliance with occupational safety and health standards; having a working experience of 1-4 years increased the odds of complying with occupational safety and health standards while being male and having a primary level of education reduced the odds of complying with occupational safety and health standards. Concerning organizational determinants of compliance to occupational safety and health standards; the presence of safe working premises and the provision of PPEs increased the odds of complying with occupational safety and health standards while not engaging employees in OSH matters reduced the odds of complying with occupational safety and health standards. Lastly, awareness of OSH standards increased the odds of complying with occupational safety and health standards.

ACKNOWLEDGEMENTS

We would like to thank the willingness of the study respondents for participating in this study.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee of the Mount Kenya University, Kenya

REFERENCES

1. The occupational safety and health act. Arrangement of sections 2007. 2007. Available at: https://eregulations.invest.go.ke/media/OSH%20Act%202007_1.pdf. Accessed 01 January 2025.
2. Fresenius.com. ILO. Annual report 2017 Social Finance and Impact Insurance. 2017. Available at: https://www.fresenius.com/sites/default/files/2022-01/Fresenius_Annual_Report_2017.pdf. Accessed 01 January 2025.
3. Hämäläinen TT. Global estimates of occupational accidents and work-related illnesses 2017. Iecon Proc (Industrial Electron Conf. 2017;1149-55.
4. I LO. Safety and health at the heart of the future of work, 2019. Available at: https://www.ilo.org/sites/default/files/wcmsp5/group_s/public/@dgreports/@dcomm/documents/publication/wcms_686645.pdf. Accessed 01 January 2025.
5. KNBS. 2019 Kenya Population and Housing Census: Volume II distribution of population by administrative units, 2019. Available at: <https://housingfinanceafrica.org/app/uploads/VOLU ME-II-KPHC-2019.pdf>. Accessed 01 January 2025.
6. KIPPRA. An Overview of Workplace Safety and Health in Kenya – KIPPRA, 2021. Available at: <https://kippra.or.ke/an-overview-of-workplace-safety-and-health-in-kenya/>. Accessed 01 January 2025.
7. Kirombo HM. Factors affecting implementation of occupational health and safety measures in the construction industry: the case of Mombasa county, Kenya (Doctoral dissertation, University of Nairobi, Kenya).
8. DOSHS. the National Occupational Safety and Health Policy; 2015. Available at: <https://www.doshmis.go.ke/2015>. Accessed on December 2024.
9. GOK. Performance audit report on protection of the safety and health of workers at workplaces. Nairobi, Kenya; 2018.
10. Kamau EN. Enforcement and compliance on occupational health and safety measures in industries in Thika municipality, Kiambu county. Bachelors Degree in Environmental Planning and Management Research Project, Department of Planning and Management, School of Environmental Studies, Kenyatta University; 2014.
11. Bekele T, Ashenaf T, Ermias A, Sadore AA. Compliance with standard safety precautions and associated factors among health care workers in Hawassa University comprehensive, specialized hospital, Southern Ethiopia. PLoS One. 2020;15(10):e0239744.
12. Mayanja LN, Ddamulira C, Katamba P, Mutekanga DR. Determinants of compliance to occupational health and safety measures in construction sites in Kampala Central Division, Kampala city, Uganda. World J Adv Res Rev. 2022;2022(02):475-91.
13. Debela MB, Deyessa N, Begosew AM, Azage M. Occupational health and safety practices and associated factors among workers in Ethiopia's Metehara and Wonji sugar industries: a convergent parallel mixed design. BMJ Open. 2023;13(2):e065382.
14. Ayoo BA, Moronge J. Factors influencing compliance with occupational safety regulations and requirements among artisanal and small-scale miners in central sakwa ward, siaya county. J Sustain Environ Peace. 2019;1(1):1-5.
15. Wagner A, Schöne L, Rieger MA. Determinants of occupational safety culture in hospitals and other workplaces-results from an integrative literature review. Int J Environ Res Public Health. 2020;17(18):1-23.
16. Hamid ARA, Razak ARA, Yusof AM, Jaya RP, Zakaria R, Aminudin E, et al. Noncompliance of the occupational safety and health legislation in the

- Malaysian construction industry. *IOP Conf Ser Earth Environ Sci*. 2019;220(1):012043.
17. Abaya PM, Diang'A S, Gwaya DQA. Factors affecting occupational safety and health compliance on construction sites in Kiambu County, Kenya. *Int J Eng Res Technol*. 2021;10(8).
 18. Aziz A, Wahab WA, Che Omar R, Zaid M, Nordin M, Taha H, et al. Factors influencing the compliance of workplace safety culture in the government linked company (GLC). 2020;325:6005.
 19. Abdul Hamid S, Leman AM, Goolamally N, Afizi Shuaib N. Occupational safety and health leadership and performance in Malaysian industries. *IOP Conf Ser Mater Sci Eng*. 2020;864(1).
 20. Zara J, Nordin SM, Isha ASN. Influence of communication determinants on safety commitment in a high-risk workplace: a systematic literature review of four communication dimensions. *Front Public Heal*. 2023;11:1225995.
 21. Eyiah AK, Kheni NA, Quartey PD, Eyiah AK, Kheni NA, Quartey PD. An assessment of occupational health and safety regulations in Ghana: a study of the construction industry. *J Build Constr Plan Res*. 2019;7(2):11-31.
 22. Marahatta SB, Gautam S, Paudel G, Yadav UN. Awareness of occupational hazards and associated factors among automobile repair Artisans in Kathmandu Metropolitan City, Nepal. *Indian J Occup Environ Med*. 2018;22(1):49.
 23. Mong'are RO. Assessment of Occupational Safety and Health Status in Selected Sawmilling Industries in Nakuru County, Kenya (Doctoral dissertation, JKUAT-IEET); 2019.

Cite this article as: Njoroge TW, Odongo AO, Muchiri JM. Determinants of compliance to occupational safety and health standards in food manufacturing industries, Thika Sub-County, Kiambu County, Kenya. *Int J Community Med Public Health* 2025;12:1617-24.