Journal of Human Resource & Leadership


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**ISSN: 2616-8421**

*Stratford Peer Reviewed Journals and Book Publishing*
*Journal of Human Resource & Leadership*
*Volume 8||Issue 2 ||Page 18-38||February ||2024|*
*Email: info@stratfordjournals.org ISSN: 2616-8421*

# Effects of Occupational Health Management Practices on Employee Productivity Among Food and Beverage Manufacturing Firms in Uasin Gishu County, Kenya

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***How to cite this article:*** **Jepchirchir, F. & Eng'airo, P. (2024). Effects of Occupational Health Management Practices on Employee Productivity Among Food and Beverage Manufacturing Firms in Uasin Gishu County, Kenya.** ***Journal of Human Resource& Leadership, 8(2)*****, 18-38. https://doi.org/10.53819/81018102t30136**

## Abstract

The food and beverage manufacturing industry contribute significantly to global socioeconomic development. The purpose of the study aimed to determine the effects of occupational health management practices on employee productivity of food and beverage manufacturing firms in Uasin Gishu County. The research questions include; how do safety training practices, hazard control practices, workplace safety inspection, safety records affect employee productivity in beverage manufacturing firms in Uasin Gishu County? Does organization culture moderate the relationship between occupational health and safety practices and employee productivity in beverage manufacturing firms in Uasin Gishu County? The study was hinged by four theories which include; Social Exchange Theory, distraction theory, goal setting theory and accident proneness theory. The study used a cross-sectional research design with the target population being 14 food and beverage companies in Uasin Gishu county. A total sample size of 236 respondents was determined using stratified random sampling. This included 37 human resource managers, 48 operations managers, and 493 factory floor staff. Data collection involved self-administered questionnaires for the HR and operations managers along with interviews of floor staff. Pilot testing of the instruments helped refine and enhance validity. Quantitative survey data was analyzed statistically in SPSS while qualitative interviews underwent content analysis to identify themes. The study found that there are positive and significant associations between occupational health management practices and employee productivity. The regression analysis showed that these practices can explain 83% of the variation in employee productivity. The study also found that organizational culture moderates the influence of occupational health practices on productivity.

**Keywords:** *Occupational Health, Management Practices, Employee Productivity, Food and Beverage, Manufacturing Firms*

## 1.0 Background of the Study

Occupational health management practices, such as eliminating hazards, encouraging healthy behaviors, providing ergonomic equipment, and instituting wellness programs, are known to enhance employee productivity by reducing injuries, decreasing absenteeism, and boosting morale (Sorensen et al., 2018; Kocakulah et al., 2016). The establishment of a culture focused on safety and wellness fosters long-term benefits (McLellan, 2017). Although the food and beverage manufacturing sector are not considered as high-risk as construction, promoting health and safety within it is crucial for protecting workers and achieving operational objectives (Ashrafi Dost, 2020). A comprehensive approach that includes policies, risk mitigation through job design and equipment provisions, and safety compliance monitoring minimizes exposures and promotes well-being (Leso et al., 2018). The food and beverage sector globally serve as a crucial manufacturing hub and a significant employer, contributing up to 15% of revenues and jobs (Food Drink Europe, 2018). Technological innovation, particularly in countries like the U.S., drives progress, although some regions, such as parts of Africa, still lack basic workplace protections (Assefa, 2018). The sector's adaptability to market fluctuations, supported by advancements in the supply chain, bolsters its competitiveness (Chepleting & Musau, 2019). Thus, effective occupational health management is essential for firms to manage industry-specific risks and maintain productivity and competitiveness.

In Kenya, the majority of food and beverage manufacturing relies on automated, mechanized processes for efficient mass production and distribution, despite significant capital and labor investments (Omari & Amedu, 2019). Local alcoholic beverage manufacturers, however, contend with illicit competition that threatens profitability (Chemutai, 2021). The workforce, comprising skilled and semi-skilled workers, faces occupational risks from environmental exposures and equipment hazards, necessitating localized occupational health management practices to tackle these unique challenges (Ahmad & Sattar, 2019). Nonetheless, international standards offer a framework to enhance productivity. Employee productivity, defined as the efficiency and effectiveness of employee contributions towards organizational goals, is influenced by factors such as training, working conditions, job satisfaction, rewards, and psychological traits like confidence and optimism (Agarwal, 2020). Productivity metrics include output volume and task completion times, highlighting the complex nature of enhancing employee productivity, with technology, industry proximity, and positive psychology interventions playing significant roles (Geylani et al., 2021). A supportive work environment and skill development opportunities are crucial for boosting workforce productivity (Abunawwas, 2018).

Occupational health management encompasses workplace policies, programs, and regulations aimed at minimizing health and safety risks to promote employee well-being (Sinollah & Zaki, 2022). Essential practices include safety training, hazard control, inspections, compliance monitoring, and ergonomic work design (Sikra, 2022; Bayram, 2022). The importance of occupational health in supporting productivity and economic success by reducing accidents and exposures is well-documented (Kahn, 2018; Chirico et al., 2019). Factors such as safety culture and individual job design, including work control, significantly impact outcomes (Rosen & Wischniewski, 2019). Additionally, government regulations, managerial networking, and technology utilization can enhance occupational health and, by extension, employee performance (Roy et al., 2020). An integrated approach, encompassing policy, programs, and culture, is vital for optimizing worker well-being through improved occupational health management.

Organizational culture, defined by shared beliefs, values, and norms, shapes employee attitudes and behaviors within the workplace (Abel et al., 2020). The role of culture in fostering commitment, cooperation, innovation, and competitive advantage, through inclusiveness, knowledge sharing, and goal alignment, is critical (Dhir, 2019). However, limitations on expressiveness can impede innovation and performance (Abel et al., 2020). Cultures that prioritize customer needs and ethical practices contribute to the success of manufacturing firms (Gbefah, 2022). Leadership is paramount in nurturing cultures of empathy, openness, and empowerment, facilitating employee and organizational prosperity (Chebichii et al., 2023). A conducive culture offers direction, meaning, and a sense of community, essential for optimal workforce productivity.

The Kenyan food and beverage manufacturing industry, producing a diverse array of grain, dairy, meat, and alcoholic/non-alcoholic beverages, has seen significant growth due to increased incomes, urbanization, and changing consumer preferences. However, it faces challenges such as infrastructural limitations, agricultural inconsistencies, technological gaps, and stringent regulations (Ouma, Dragic & Odongo 2022). Government efforts aim to support industry expansion through infrastructure investments, research and development promotion, and the establishment of quality control standards (Pawlak & Kołodziejczak, 2020). The beverage sector in Kenya, featuring both local alcohol brands and multinational non-alcoholic entities, competes with illicit alcoholic substitutes, presenting both opportunities and challenges for productivity within capital-intensive and employment-extensive manufacturing firms (Kipchumba 2018).

### 1.1 Statement of the Problem

The food and beverage manufacturing industry significantly contribute to socioeconomic development worldwide, highlighting its importance in various global contexts (Belyaeva et al., 2020). A critical issue within this sector is maintaining high levels of employee productivity, often hampered by insufficient adherence to occupational health and safety standards. The World Health Organization emphasizes the critical role of these standards in ensuring worker well-being. Yet, many firms sidestep strict compliance, citing high costs as a prohibitive factor, which leads to a range of workplace injuries and negatively affects productivity (Kisner et al., 2020). In Kenya, the situation is particularly pressing, with the productivity of numerous food and beverage manufacturing firms being compromised due to a lack of focus on occupational health and safety. The prevalent use of defective machinery, often operated by workers without proper training or awareness of potential hazards, results in frequent accidents (Chepleting & Musau, 2019). This oversight not only elevates health risks and absenteeism but also leads to increased worker compensation claims, further burdening the companies' performance and employee productivity (Reardon et al., 2021).

While existing research has explored related topics, there remains a noticeable gap in understanding how occupational health management practices specifically impact employee productivity within the food and beverage industry, particularly in Kenya (Chepleting & Musau, 2019). This gap is compounded by contextual differences, as studies in other regions, such as Ghana, might not capture the unique challenges faced in the Kenyan context. This study aims to address the critical issue of diminished employee productivity due to inadequate occupational health management practices in food and beverage manufacturing firms located in Uasin Gishu County, Kenya. By focusing on this area, the study intends to enrich the existing body of knowledge, demonstrating how improvements in occupational health management can

significantly enhance employee productivity and, consequently, strengthen the sector's overall performance.

### 1.2 Objective of the Study

To determine the effects of occupational health management practices on employee productivity among food and beverage manufacturing firms in Uasin Gishu county, Kenya.

#### 1.2.1 Research questions

i. How does safety training affect employee productivity in food and beverage manufacturing firms in Uasin Gishu County?
ii. How does hazard control influence employee productivity in food and beverage manufacturing firms in Uasin Gishu County?
iii. How do safety inspection influence employee productivity in food and beverage manufacturing firms in Uasin Gishu County?
iv. How do safety records affect employee productivity in food and beverage manufacturing firms in Uasin Gishu County?
v. What is the moderating effect of organization culture on the relationship between occupational health safety practices and employee productivity in beverage manufacturing firms in Uasin Gishu County?
vi. What is the effect of occupational health management practices on employee productivity in food and beverage manufacturing firms in Uasin Gishu County?

## 2.0 Literature Review

The section presents theoretical, empirical reviews and conceptual framework.

### 2.1 Theoretical Review

This section presented the theories that inform the study variables which includes; distraction theory, goal setting theory and accident proneness theory.

#### 2.1.1 Distraction Theory

The distraction theory refers to a set of approaches that posit humans have limited cognitive resources (Kahneman, 1973), so introducing distractions divides these resources and impairs performance on tasks requiring concentration (Baron, 1986). A key assumption is selective attention, whereby individuals focus cognitive resources on certain stimuli while filtering out others, though potent distractions can override this selective focus (Broadbent, 1958). Sensory overload suggests high distraction volumes decrease productivity by overtaxing information processing capabilities (Milgram, 1970). However, some critique distraction theory for overemphasizing negative impacts, as distractions can provide cognitive breaks that may improve performance (Speier, Valacich, & Vessey, 1999). There is also variance in individual susceptibility to distractions that is often overlooked (Kane & McVay, 2012). Despite criticisms, distraction theory provides a valuable framework for examining how environmental workplace factors like noise or interruptions can distract employees and affect productivity (Mark et al., 2008). Understanding distractions' role can help organizations minimize them through interventions like

quiet workspaces (Oldham, 1988). Thus, distraction theory offers a useful perspective on occupational health management and employee productivity, though not without limitations (Eastwood et al., 2012).

### 2.1.2 Goal Setting Theory of Motivation

Locke's goal-setting theory of motivation emphasizes the strong connection between goals and performance, with specific, challenging goals leading to better results, especially when used to evaluate performance and provide feedback (Baum & Locke, 2004). Key findings are that specific, challenging yet attainable goals boost performance versus vague, easy goals (LePine, 2005). Practical suggestions include setting quantifiable goals to help employees measure progress and ensuring challenge while remaining within capabilities, as overly difficult goals hurt performance by seeming unreasonable (Lee, Sheldon, & Turban, 2006). Employee participation in goal-setting increases acceptance and achievement likelihood (Yearta, Maitlis, & Briner, 2005). Regular progress updates and guidance help success (Donovan & Williams, 2008). Deadlines add motivational accountability (Locke & Latham, 2008). However, sole focus on rewards risks unethical behavior (Wiese & Freund, 2010). The theory supports the study's dependent variable of employee productivity and its specific, measurable indicators like quality, delivery, and absenteeism.

### 2.1.3 Accident Proneness Theory

Accident proneness as a concept can be traced back to 1920s and 1930s psychological and industrial studies (Bates & Neyman, 1952). Certain personality traits, such as impulsivity, risk-taking, or a lack of attention, are thought to increase the likelihood of being involved in an accident (Johnson, 1946). According to the theory, people who have been in accidents are more likely to have more accidents (Burnham, 2008). According to Reason (1990), accident proneness is not just about the individual, but also about the interaction between the individual and their environment. The relevancy of the accident proneness concept is still being debated, as empirical evidence has been inconsistent. Some studies discovered evidence of accident proclivity, while others did not (Matthews, 2002). The theory has been criticized for emphasizing individual characteristics rather than external factors such as workplace safety standards and training (Hale & Glendon, 1987). Labeling people as "accident prone" can lead to stigma and blame, undermining efforts to improve safety. It shifts the emphasis from system improvements to individual blame for accidents (Reason, 1997). The theory of accident proneness can be used in the current study to examine whether certain personality traits or behaviours make some employees more likely to experience workplace accidents, affecting their productivity. It can also aid in the development of more personalized safety training and hazard control procedures. Individuals who are more prone to accidents can be identified, and specific interventions can be developed to help these employees work more safely, thereby increasing their productivity and the overall safety culture in the organization.

## 2.2 Empirical Review

Past studies have explored the relationship between various occupational health and safety practices and employee productivity in different contexts. Okechukwu and Chizoba (2022) found safety planning and training improved output and service quality in Nigerian manufacturing firms. However, their study did not focus on the beverage industry in Kenya specifically. Bayram (2022) showed safety training, knowledge, motivation and compliance boosted employee safety

productivity, though they did not examine overall job performance. Sal and Raja (2016) established positive links between training programs and employee performance in Jordan, but did not focus on safety practices in manufacturing. Nyambura and Simon (2019) found safety awareness initiatives improved productivity in Kenyan power companies, highlighting the need for training, though their industry focus differed. Demirkesen and Arditi (2018) emphasized safety training's importance in construction, despite the contextual gap from manufacturing. While providing relevant insights, these studies leave gaps in understanding the specific relationship between safety training and productivity in beverage manufacturing. Other studies have focused more narrowly on food safety training in schools and restaurants. Husain et al. (2016) showed safety training improved food handler knowledge and practices in primary schools, but the setting was very different. Aquino et al. (2021) found food safety training strengthened the relationship between knowledge, attitudes and practices for restaurant handlers, emphasizing training's importance. However, the fast food context limits applicability to manufacturing. Overall, while valuable, the existing literature leaves room for further investigation on how safety training itself affects productivity outcomes for employees in beverage manufacturing firms specifically. The contextual and conceptual gaps in prior studies highlight the need for additional research in this domain.

Shaikh et al. (2018) identified numerous safety hazards in textile facilities, emphasizing the need for hazard control practices despite lacking a direct analysis of productivity impacts. Musungwa and Kowe (2022) found behavioral issues were the main cause of accidents in a beverage plant, though they did not link practices to productivity. Gbadago et al. (2017) noted financial constraints on safety measures in Ghana, but did not use standardized measures. Olorunfemi et al. (2022) showed high hazard knowledge did not translate fully into practices in Nigerian hospitals. Lazarus and Amadi Precious (2022) found hazard controls varied based on worker demographics in timber processing plants, though the industry focus differed. Falakh and Setiani (2018) systematically identified hazards in water treatment but did not measure practices or productivity. Adewale and Adhuze (2017) linked construction workers' knowledge to practices but focused on a different context. While providing relevant insights, these studies leave gaps in understanding the relationship between hazard control practices and productivity in beverage manufacturing specifically. Other studies focused more narrowly on industries like textiles and distilleries. Bortoletto et al. (2018) outlined critical control points for safety hazards in cachaça production, but did not measure practices or productivity.

Umugwaneza et al. (2019) conducted a study in Rwanda to determine the effects of workplace safety and health practices on employee engagement and performance. A simple random sampling procedure was applied. Questionnaires were used to collect data. Data were processed using SPSS, and descriptive statistics such as means, modes, standard deviation, variances, and inferential statistics were utilized to examine the data. The study's findings showed that most workers were aware of the hazards of occupational health and safety in the workplace. Additionally, the study found that, despite being aware of occupational health and safety problems, employees fail to put on Personal Protective Equipment, claiming that it is due to the hot weather. The study further established that occupational health and safety have a major impact on employee commitment and performance. The study recommended that management should ensure workers and provide them with personal protective equipment to reduce workplace injuries and accidents. The study also suggested that management provide frequent education and training on occupational health and

safety issues to reduce workplace injuries and thereby increase productivity. However, the study did not directly examine the relationship between workplace safety inspection and employee productivity, creating a conceptual gap.

Okumu et al. (2018) carried out a research study to evaluate the effects of occupational health and safety inspections on the levels of productivity exhibited by workers in sugar companies located in Kakamega County, Kenya. The research followed a causal approach to determine the effect that occupational health and safety inspections have on employee productivity. The study findings indicated that occupational health and safety inspections as well as employee productivity showed that if inspections were raised by one-unit level, employee productivity would improve. The study also showed that occupational health and safety inspections provide a more complete explanation for employee productivity. The study recommended that managers of sugar companies should make it a priority to ensure that regular inspections of occupational health and safety are carried out. This helped to cut down on the number of accidents and injuries that occur as well as boost employee productivity. Inspecting, Occupational Health and Safety, and the Performance of Employees. While the study determines the relationship between inspections and employee productivity, there is a methodological gap as the study did not employ specific measures of workplace safety inspection or directly measure employee productivity.

Barake (2017) conducted a survey study of NHIF at Kisii Branch to assess the influence of employee health and safety measures on workplace performance. The descriptive research design was used in the study. According to the findings of the study, one of the health and safety measures implemented for organizational performance is awareness. Similarly, the research found that adequate health facilities and employee training were other health and safety measures in place for organizational performance. The research also found that one of the policies used by organizations to improve health and safety is employee welfare programs. Based on the study, government regulations, health and safety policies, and risk assessment are some of the policies used by organizations to improve health and safety. Moreover, the study found that improved organizational performance is one of the effects of health and safety measures on employee productivity, efficient operations, and overall high performance. According to the study, for NHIF Kisii to improve its safety measures, it should take reasonable steps as a legal responsibility to ensure the health, safety, and welfare of its employees at work to avoid being held liable for any personnel injury. The study also recommended that employers be required to assess and manage risks to their employees and others arising from work activities under workplace health and safety regulations.

Handoko et al. (2020) conducted a research study to examine the factors of occupational health and safety (OHS) implementation influencing road construction workers' performance. The quantitative survey method was used in the research study. The research found that the appropriate use of work equipment was the most prevalent among several elements of the work safety variable statement. The study also found that the first aid kits provided by employers were an occupational health variable. The research also revealed that workers' willingness to follow rules leads to meeting work objectives. The study concluded that implementing occupational safety and health measures improved employee performance. The study also concluded that the use of OHS in construction projects affects worker performance, which in turn determines the achievement of the company's work targets. There is a contextual gap since the study focused on road construction workers while the current study concentrated on food and beverage manufacturing firms.

Otitolaiye (2016) conducted a research study to investigate the mediating effect of the safety management system on the relationship between safety culture and the safety performance of F&B industries in Lagos, Nigeria. The data was gathered from 126 heads of safety managers through the use of self-reported questionnaires, and the Smart PLS was utilized for the analysis of the data. The findings of the study, a significant and favorable relationship between safety performance and safety culture, as well as safety management systems, exists. The findings of the study also demonstrated that a safety management system acts as a mediator in the connection between safety culture and safety performance. The research concluded that although safety culture is positively and significantly related to safety performance, the effect of safety culture on safety performance was greater if organizations develop and continuously implement an effective safety management system.

Awino et al. (2018) conducted a study to examine the impact of organizational culture on the relationship between firm-level strategy and performance in the food and beverage manufacturing sector in Kenya. The study collected data from the CEOs/MDs of 125 food and beverage manufacturing firms in Kenya. A structured questionnaire was used to gather their opinions on organizational culture, firm-level strategy, and performance. The study hypothesized that organizational culture would have a significant effect on the relationship between firm-level strategy and performance. The results of the analysis supported this hypothesis, indicating that organizational culture does indeed play a crucial role in influencing the effectiveness of firm-level strategies and, consequently, the overall performance of food and beverage manufacturing firms. The findings suggest that the development of a strong organizational culture is essential to support and align firm-level strategies, leading to improved performance outcomes. The study concluded that building a positive organizational culture is of paramount importance for food and beverage manufacturing firms in Kenya. A strong organizational culture that supports and aligns with firm-level strategies can significantly enhance performance outcomes. However, the study presents a conceptual gap as it does not provide a comprehensive explanation of the mechanisms through which organizational culture influences the relationship between occupational health and safety practices and employee productivity in beverage manufacturing firms.

Nzewi et al. (2018) studied the nature of the relationship between the physical working environment and employee performance in selected brewing firms in Anambra State. The study adopted a survey research design to gather data from the selected brewing firms in Anambra State. The population of the study consisted of 550 employees, and a sample size of 233 was determined using Taro Yamane's formula. The findings of the study revealed a significant positive relationship between the ergonomic aspects of the physical working environment and job satisfaction among employees in the studied brewing firms. Based on the study's findings, the study recommended that the management of the focused brewing firms prioritize the adaptation of equipment and machinery to suit the workers who operate them.

### 1.8 Conceptual Frame Work

A conceptual framework is a diagrammatical representation that shows the relationship between dependent and independent variables (Creswell, 2014). Figure 1.1 presents the conceptual framework.

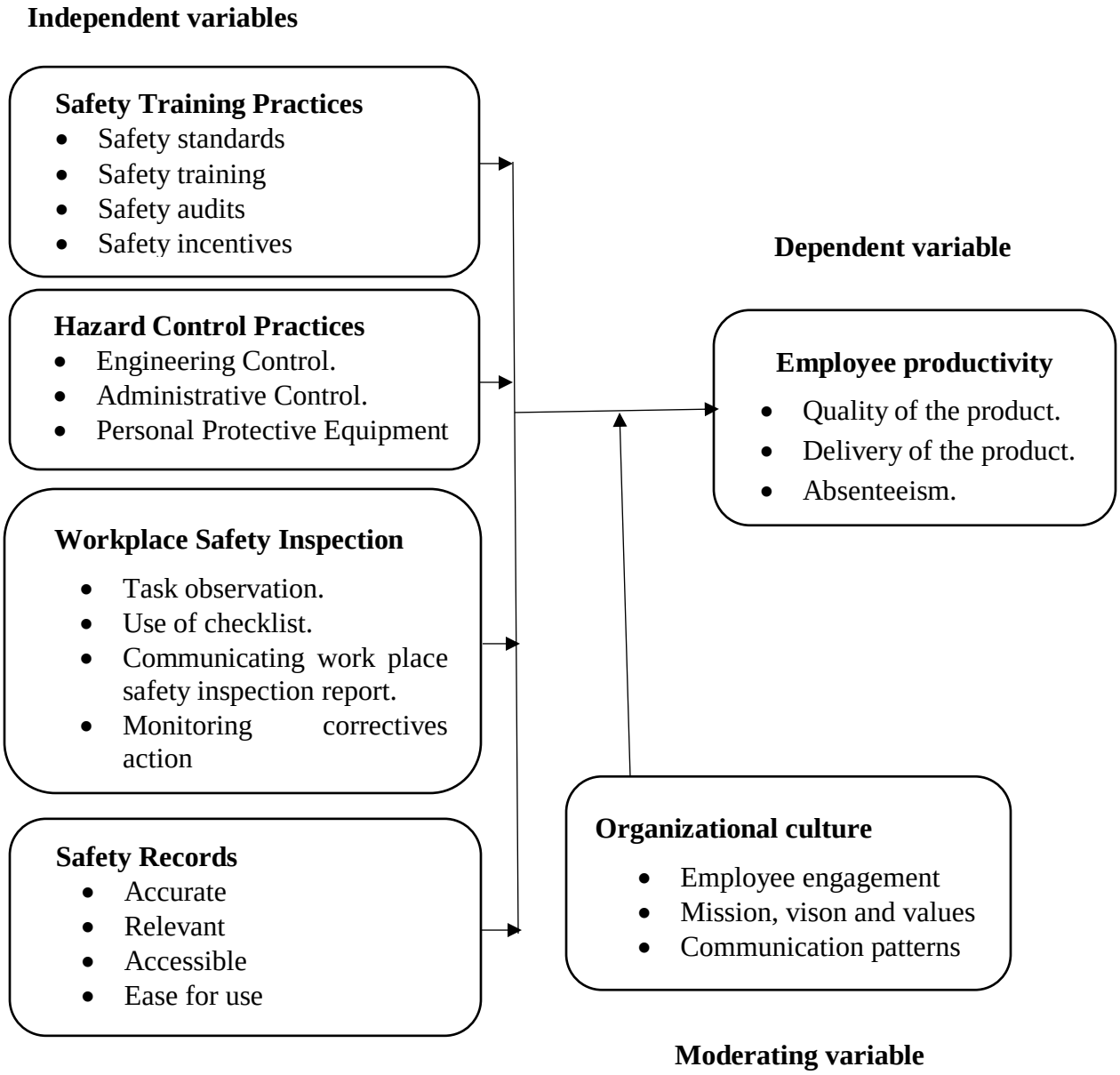


**Figure 1: Conceptual framework**

### 3.0 Research Design and Methodology

The study adopted a cross-sectional research design. The study's population was 14 foods and beverage companies in Uasin Gishu county. A total of 542 respondents which included; human resource manager (HRM) (32), operation manager (45) and factory floor staff (465) was considered owing to their positioning to respond effectively in this study. Stratified random sampling was used to obtain a sample size of 230 respondents. Primary data was collected by means of a questionnaire and interview schedules. Quantitative data from research instruments was

cleaned and then coded into a computer and analysis was done using Statistical Package for Social Sciences (SPSS). Content analysis was conducted on qualitative data using thematic themes.

## 4.0 Findings and Discussion

The study had a 94% response rate with 194 out of 207 questionnaires returned. The respondents were diverse in gender, age, education level, experience, and position. The majority were male (52%), aged 31-40 years (32%), held diplomas (42%), had 2-4 years' experience (34%), and were factory floor staff (54%). This reflects a wide range of demographics and roles within the companies surveyed, providing insights into the workforce composition and qualifications in this industry in the region.

### 4.1 Qualitative Analysis

#### 4.1.1 Qualitative Findings on Safety Training Practices

The study also conducted qualitative analysis through key informant interviews to gain additional insights into safety training practices. The key informants highlighted the importance of safety training for employee productivity in the beverage manufacturing industry:

KII informant 001 stated:

> *"…safety training practices are critical in the beverage manufacturing industry because they not only ensure employee safety but also increase productivity. Employees can work more efficiently without fear of accidents or injuries if they understand and follow safety standards. Proper training instills confidence, allows for smoother machine operation, and fosters a positive work environment in which everyone understands their roles in maintaining safety."*

KII informant 003 mentioned:

> *"….my experience, safety training practices are directly related to employee productivity in our company. Ensuring that all employees are well-trained in safety procedures reduces downtime due to accidents or mishandlings. It also fosters a culture of responsibility and awareness, in which employees look out for one another and take the necessary precautions. This results in a more engaged and focused workforce, which naturally translates into higher productivity."*

KII informant 007 indicated:

> *".... the beverage manufacturing industry, safety training practices play a variety of functions in increasing employee productivity. On one level, they help to reduce accidents and medical absences, ensuring consistent manpower. On a different level, safety training empowers employees by providing them with the knowledge and tools they require to do their jobs competently. Understanding potential risks and how to mitigate them will result in a more streamlined and efficient workflow. Finally, investing in safety training is about more than just compliance; it is about developing a resilient and productive workforce."*

The key informants emphasized how proper safety training not only prevents accidents but builds an engaged, empowered, and productive workforce.

### 4.1.2 Qualitative Findings on Hazard Control Practices

The study also conducted qualitative analysis through key informant interviews to gain additional perspectives on hazard control practices. The key informants emphasized the importance of effective hazard control for employee productivity and organizational success in beverage manufacturing:

KII informant 004 stated:

> *"……hazard control practices, in my opinion, have a significant impact on employee productivity in beverage manufacturing companies. Implementing effective hazard control measures ensures that the workplace is safe and that employees are less likely to be injured. This, in turn, reduces downtime due to accidents or injuries and fosters a positive work environment where employees can focus on their tasks. Employees who believe their safety is a priority are more likely to be engaged, motivated, and productive."*

KII informant 007 mentioned:

> *"I believe that hazard control practices are not only important for employee productivity, but also for the long-term viability and reputation of beverage manufacturing companies. Strict adherence to safety standards, as well as regular inspections, ensure that potential hazards are identified and mitigated as soon as possible. Employees are empowered to take responsibility for their own safety and the safety of those around them when they receive proper training on hazard control and the use of Personal Protective Equipment (PPE). This collaborative approach to safety fosters a sense of responsibility, boosts morale, and ultimately leads to increased productivity."*

The qualitative findings reinforce the survey results indicating positive effects of hazard control practices like regular assessments, use of PPE, training, inspections, and incident investigation on employee productivity.

### 4.1.3 Qualitative Findings on Workplace Safety Inspection

The study also conducted qualitative analysis through a key informant interview to gain additional perspective on workplace safety inspection. The key informant emphasized the importance of regular safety inspections for employee productivity and organizational culture in beverage manufacturing:

KII informant 010 stated:

> *"……in my opinion, workplace safety inspection is critical to employee productivity in beverage manufacturing companies. Regular inspections ensure that potential hazards are addressed promptly, machinery is kept in good working order, and safety standards are met. This fosters a culture of trust and safety within the organization, allowing employees to feel secure and focus on their tasks without fear of potential risks. Workplace safety inspection is not just a compliance requirement in our company; it is an integral part of our operational strategy, directly influencing productivity by creating an environment conducive to efficient work."*

The qualitative finding reinforces the survey results indicating a positive effect of regular workplace safety inspections on employee productivity. Thorough inspections help identify and mitigate hazards, building an organizational culture of safety where employees can thrive.

### 4.1.4 Qualitative Findings on Safety Records

The study also conducted qualitative analysis through key informant interviews to gain additional insights into safety records. The key informants emphasized how comprehensive safety records contribute to employee productivity in beverage manufacturing:

KII informant 13 stated:

> *"Safety records, in my opinion, have a significant impact on employee productivity in beverage manufacturing companies. By recording and analyzing incident and accident data, the company can identify patterns and trends that lead to accidents, allowing them to implement preventative measures. Encouraging employees to report near-misses and keeping comprehensive and accurate safety records not only helps to maintain a safe working environment, but it also fosters a sense of responsibility among employees. Regular training on safety recordkeeping ensures consistency and adherence to safety standards. Accessible safety records and regular safety audits improve transparency and trust within the organization. All of these factors work together to create a culture of safety and responsibility, which translates into higher productivity because employees work in an environment where they feel safe and valued."*

KII informant 18 showed:

> *"Safety records, in my opinion, are critical to employee productivity in beverage manufacturing companies. The company can identify areas where safety can be improved by diligently recording and analyzing incident and accident data. This proactive approach reduces risks while also promoting employee well-being. Knowing that the company values safety and learns from near-misses gives employees the confidence to work efficiently and effectively, which boosts productivity."*

### 4.1.5 Qualitative Findings on Organization Culture

The study also conducted a key informant interview to gain additional perspective on how organization culture impacts employee productivity and safety practices. The key informant provided insights into how their organization's culture promotes professional development, inclusion, advancement, and recognition:

KII informant 007 stated:

> *".... I believe that the culture of my organization promotes our employees' professional development and growth by creating a learning environment in which employees feel comfortable taking risks and trying new things. The organization also values diversity and inclusion, provides opportunities for advancement, and recognizes and rewards excellence. These factors contribute to a culture that encourages learning and growth, resulting in more engaged, productive, and satisfied employees."*

The qualitative finding highlights how an organization culture focused on employee growth, advancement, diversity, and recognition fosters greater engagement, satisfaction, and productivity.

This aligns with and provides an insider perspective on the role organizational culture plays in enabling occupational health and safety practices to enhance employee productivity. The inclusive, developmental culture described promotes the behaviors and shared commitment to safety reflected in the survey responses.

### 4.2 Correlation Analysis

Spearman rank correlation analysis was conducted to measure the extent of association between the independent, moderating and dependent variables of study. The relationship was between safety training, hazard control practices, workplace safety inspection, safety records, organizational culture and employee productivity beverage manufacturing firms in Uasin Gishu County, Kenya. The Spearman rank correlation matrix is presented in Table 1.

**Table 1: Correlation Analysis**

| | Employee Productivity | Safety Training Practices | Hazard Control Practices | Workplace Safety Inspection | Safety Records | Organization Culture |
|---|---|---|---|---|---|---|
| Employee Productivity | 1.000 | | | | | |
| Safety Training Practices | .731** | 1.000 | | | | |
| | 0.000 | | | | | |
| Hazard Control Practices | .715** | .436** | 1.000 | | | |
| | 0.000 | 0.000 | | | | |
| Workplace Safety Inspection | .599** | .361** | .476** | 1.000 | | |
| | 0.000 | 0.000 | 0.000 | | | |
| Safety Records | .702** | .441** | .543** | .836** | 1.000 | |
| | 0.000 | 0.000 | 0.000 | 0.000 | | |
| Organization Culture | .777** | .663** | .545** | .609** | .738** | 1.000 |
| | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |

The results revealed that Safety Training Practices (r= 0.731**, p=0.000) are positively and significantly associated with employee productivity in beverage manufacturing firms in Uasin Gishu County. The results further indicated that Hazard Control Practices (r= 0.715**, p=0.000) are also positively and significantly associated with employee productivity in beverage manufacturing firms in Uasin Gishu County. The results showed that Workplace Safety Inspection (r= 0.599**, p=0.000) and employee productivity in beverage manufacturing firms in Uasin Gishu County are positively and significantly associated. In addition, the results revealed that Safety Records (r= 0.702**, p=0.000) and employee productivity in beverage manufacturing firms in Uasin Gishu County are positively and significantly related. Lastly, the results showed that Organization Culture (r= 0.777**, p=0.000) and employee productivity in beverage manufacturing

*Stratford Peer Reviewed Journals and Book Publishing*
*Journal of Human Resource & Leadership*
*Volume 8||Issue 2 ||Page 18-38||February ||2024|*
*Email: info@stratfordjournals.org ISSN: 2616-8421*

firms in Uasin Gishu County are positively and significantly related. This implies that an increase in safety training practices, hazard control practices, workplace safety inspection, safety records, and organizational culture would lead to an increase in employee productivity in beverage manufacturing firms in Uasin Gishu County.

### 4.3 Results of Regression Analysis

Regression analysis was conducted to establish the statistical significance relationship between safety training, hazard control practices, workplace safety inspection, safety records, organizational culture and employee productivity beverage manufacturing firms in Uasin Gishu County, Kenya. The results presented in Table 2 present the results used of the regression model in explaining the study phenomena.

**Table 2: Regression Coefficients**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -0.479 | 0.119 | | -4.031 | 0.000 |
| | Safety Training Practices | 0.329 | 0.033 | 0.363 | 9.946 | 0.000 |
| | Hazard Control Practices | 0.285 | 0.04 | 0.278 | 7.182 | 0.000 |
| | Workplace Safety Inspection | 0.245 | 0.039 | 0.251 | 6.316 | 0.000 |
| | Safety Records | 0.28 | 0.041 | 0.26 | 6.808 | 0.000 |

The variables of safety training, hazard control practices, workplace safety inspection, and safety records were identified as significant factors in explaining employee productivity in beverage manufacturing firms. This is evidenced by a coefficient of determination, also known as R-squared, of 0.83. This indicates that safety training, hazard control practices, workplace safety inspection, and safety records account for 83% of the variance in the dependent variable, which is employee productivity. The findings further validate that the regression model is significant, as indicated by an F-value of 230.327 with a p-value of less than 0.0001 ($p < 0.000$), signifying statistical significance since the p-value is less than the conventional threshold of 0.05. Regression coefficient analysis was employed to determine the statistical significance of the relationship between the independent variables and the dependent variable, which was employee productivity. A constant of -0.479 implies that, with the independent variables held constant, employee productivity would stand at -0.479 units. The results of the regression coefficients indicate a positive and significant relationship between training and employee productivity ($\beta = 0.329$, $p =$

0.000). Similarly, a positive and significant correlation exists between hazards and employee productivity (β = 0.285, p = 0.000). The relationship between workplace safety inspection and employee productivity is also positive and significant (β = 0.245, p = 0.000). Lastly, the findings reveal that safety records and employee productivity are positively and significantly associated (β = 0.28, p = 0.000).

The regression model was presented as follows:

$Y = -0.479 + 0.329X_1 + 0.285X_2 + 0.245X_3 + 0.28X_4$

Where;

Y = Employee Productivity

$X_1$ = Training

$X_2$ = Hazard Control Practices

$X_3$ = Workplace Safety Inspection

$X_4$ = Safety Records

**4.4 Moderating Effect of Organization Culture**

It analyzes how organizational culture influences the relationships between safety the effects of occupational health management practices and employee productivity among food and beverage manufacturing firms in Uasin Gishu county, Kenya.

The moderating effect was analyzed in 3 steps as shown below;

$P= \beta0+\beta1OHMP+\varepsilon$

$P=\beta0+\beta1\ OHMP +\beta2OC+\varepsilon$

$P=\beta0+\beta1OHMP + \beta2OC+\beta3OHMP*OC + \varepsilon$

Where;

OHMP= Occupational Health Management Practices

OC= Organization culture

P = Employee Productivity

The coefficient of determination (R squared) for the three steps is presented below in Table 3.

**Table 3: Regression Coefficients**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -0.43 | 0.144 | | -2.99 | 0.003 |
| | OHMP | 1.125 | 0.046 | 0.869 | 24.391 | 0.000 |
| 2 | (Constant) | -0.407 | 0.139 | | -2.924 | 0.004 |
| | OHMP | 0.897 | 0.075 | 0.693 | 11.909 | 0.000 |
| | Culture | 0.223 | 0.059 | 0.22 | 3.776 | 0.000 |
| 3 | (Constant) | 1.478 | 0.332 | | 4.459 | 0.000 |
| | OHMP | 0.352 | 0.112 | 0.272 | 3.139 | 0.002 |
| | OC | -0.513 | 0.131 | -0.506 | -3.913 | 0.000 |
| | OHMP_OC | 0.424 | 0.069 | 1.11 | 6.16 | 0.000 |

The fitted models were:

P = -0.43 + 1.125OHMP

P = -0.407 + 0.897OHMP + 0.223OC

P = 1.478 + 0.352OHMP - 0.513OC + 0.424OHMP*OC

The regression coefficients results, as shown in Table 3, indicate that in the first step, the regression model examining the impact of Occupational Health Management Practices (OHMP) on Employee Productivity (P) demonstrates a positive and significant relationship ($\beta = 1.125$, $p = 0.000$). In the second step, the findings reveal that the regression model, which includes both OHMP and Organizational Culture (OC) influencing Employee Productivity, is positively and significantly related ($\beta = 0.897$, $p = 0.000$ for OHMP; $\beta = 0.223$, $p = 0.000$ for OC). In the third step, the results indicate that the regression model, incorporating OHMP, OC, and the interaction between OHMP and OC on Employee Productivity, is positively and significantly associated, with the coefficients being $\beta = 0.352$, $p = 0.002$ for OHMP; $\beta = -0.513$, $p = 0.000$ for OC; and $\beta = 0.424$, $p = 0.000$ for the interaction between OHMP and OC, respectively.

## 5.0 Conclusions

The study concludes that occupational health management practices significantly impact employee productivity within beverage manufacturing firms in Uasin Gishu County. A strong positive correlation was observed between employee productivity and safety training practices, aligning with prior research that underscores the crucial role of safety training in enhancing employee performance. Likewise, hazard control practices were found to have a positive and significant relationship with employee productivity, consistent with existing literature that highlights the importance of effective hazard management. The study's findings also revealed that workplace safety inspections and safety records are strongly and positively associated with employee productivity, underscoring their vital contributions to creating a safer and more productive work environment. Additionally, the study confirmed the role of organizational culture in moderating the relationship between occupational health management practices and employee productivity. The positive correlation between organizational culture and employee productivity underscores

the significance of fostering a supportive work culture to maximize the benefits of health management practices. Ultimately, this study demonstrates that enhancing safety training, hazard control practices, workplace safety inspections, safety records, and organizational culture can all contribute to increased employee productivity in beverage manufacturing firms in Uasin Gishu County.

## 6.0 Recommendations

The study recommends that beverage manufacturing firms take proactive steps to improve safety training, hazard control, inspections, record-keeping, and organizational culture. Investing in these occupational health management practices can directly enhance employee productivity based on the study's findings. The policy recommendations provide guidance on specific actions firms can take to strengthen their safety programs and performance.

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