

# Knowledge, attitudes and perceptions of workers on safety hazards and health risks in vehicle body manufacturing companies in Nairobi County, Kenya

Charles Abanga<sup>1\*</sup>, Wilkister Moturi<sup>2</sup>, Stanley Makindi<sup>3</sup>  
<sup>1, 2</sup> Department of Environmental Science, Egerton University  
<sup>3</sup> Department of Environmental Science, Machakos University  
\*Corresponding author

DOI: <https://dx.doi.org/10.47772/IJRISS.2023.7678>

Received: 28 April 2023; Revised: 24 May 2023; Accepted: 30 May 2023; Published: 09 July 2023

## ABSTRACT

The manufacturing of vehicle bodies in Nairobi County, Kenya, exposes workers to a number of safety and health risks. For the purpose of creating efficient safety and health programs, it is essential to comprehend the knowledge, attitudes, and perceptions of employees about these hazards. Therefore, this paper intended to investigate the knowledge, attitudes, and perceptions of employees regarding health and safety hazards in Nairobi County, Kenya where majority of vehicle body manufacturing companies are situated. A structured questionnaire was used to obtain qualitative and quantitative data from 260 firms using a cross-sectional survey approach. The data was analyzed using descriptive and inferential statistics. The results showed that the knowledge, attitudes and perception of workers on safety hazards and risks in the vehicle body manufacturing companies was highly affected and dependent on the need for occupational health risks and safety hazards being reported to the administration. Within this, majority respondents argued that improved personnel management would be essential in improving knowledge, attitudes and perception of workers on the OSH. The results will provide insight into the level of workers' awareness of health and safety problems, their attitudes toward safety precautions, and their opinions of how effective current safety programs are. These findings will help to establish targeted safety measures and policies that will lessen the impact of health and safety concerns on workers in Nairobi County, Kenya's vehicle body manufacturing sector.

**Keywords:** Knowledge, Attitudes, Perception, Vehicle Body Manufacturing

## BACKGROUND INFORMATION

Kenya's automotive sector is expanding quickly, especially the manufacture of vehicle bodies. It is an essential part of Kenya's economy that contributes to job creation and economic growth is the manufacture of vehicle bodies (Kariuki, 2020). Although this increase is good for the economy, it puts workers at risk for several health and safety issues. Nevertheless, because of exposure to several hazardous products and substances, workers in this sector confront numerous safety and health risks. The Occupational Safety and Health Act of 2007 mandates that companies be responsible for the health and safety of their workers (Government of Kenya, 2007).

Despite these laws, there have been several instances of workplace accidents and injuries in Nairobi County's vehicle body manufacturing sector. Workers in this field have a high risk of injury due to exposure to sharp objects, heavy machinery, and potentially harmful chemicals (Otieno and Ngunjiri 2019).

Similar to this, Wamalwa and Mutua's (2018) research revealed that this industry's workers are frequently exposed to loud noises and dust, which can cause hearing loss and respiratory illness.

Furthermore, the attitudes and perceptions of employees regarding health and safety issues at work can have effect on their safety and wellbeing. According to research, employees with a pro-safety mindset are more likely to follow safety rules and take the appropriate steps (Bakri, 2019). Nonetheless, employees that have a poor attitude toward safety may not give attention, which would increase workplace accidents and injuries. A key element in reducing accidents and injuries is having knowledge of the safety and health hazards associated with fabricating vehicle bodies. The general level of worker awareness of health and safety problems in Kenyan automobile body production is low. Only 24.4% of employees in Nairobi County's automobile body manufacturing enterprises had sufficient knowledge of safety dangers (Kipruto *et al.* 2020). The study also discovered that 75.6% of employees had insufficient knowledge of safety risks, which made them more susceptible to accidents and injuries.

In the manufacturing of vehicle bodies, attitudes toward safety hazards and health concerns contribute towards reduction of accidents and injuries. A study by Gichuru *et al.* (2019) found that 70% of workers had good a positive perception regarding workplace safety. The survey did discover that 30% of employees had unfavorable attitudes toward safety, which could result in complacency and a higher chance of mishaps and injuries within the automobile sector in Kenya.

In addition, workers' behaviors and choices about workplace safety might be influenced by their perceptions of the safety risks and health concerns present in the fabrication of car bodies. In Kenyan automobile body production, workers' opinions of safety and health concerns are often negative. Only 27.5% of employees at Nairobi County's automobile body manufacturing industries believed their workplace to be secure (Wanjohi *et al.* 2021). According to the study, 72.5% of workers believed their workplace to be unsafe, which may encourage more reckless behavior and increase the likelihood of accidents and injuries.

Therefore, as per the different studies cited above, Kenya's problem in the knowledge, attitudes and perceptions of workers on safety and hazards in vehicle body manufacturing companies is the absence of adequate safety precautions and corporate training initiatives. Most vehicle body manufacturing enterprises in Nairobi County have not fully achieved the regulatory requirement, leading to high rates of occupational accidents and injuries (Gichunge, 2018). Consequently, the lack of adequate safety measures, training, and information results in low of awareness and non-compliance with safety regulations among workers.

In this context, there has not been much research on workers attitude on safety and health in the vehicle body manufacturing in Nairobi County. By probing the knowledge, attitudes, and perceptions of employees on safety hazards and health risks at automobile body manufacturing enterprises in Nairobi Kenya, this study aimed to close this gap. The results of this study helped to develop useful treatments to enhance workplace safety and health in this industry by giving important new insights into the variables that affect workers' safety and health perception.

The study had limitation due to the scope, the extent of accidents, injuries and damage could not be quantified in monetary terms. More time would be required to establish the nature of safety and health affects that some of which would call for long period of time due the gradual effects. A future research is recommended that will quantify the health effect verses the attitudes that incudes cost of injuries in terms of treatment and work lost time as well insurance compensation.

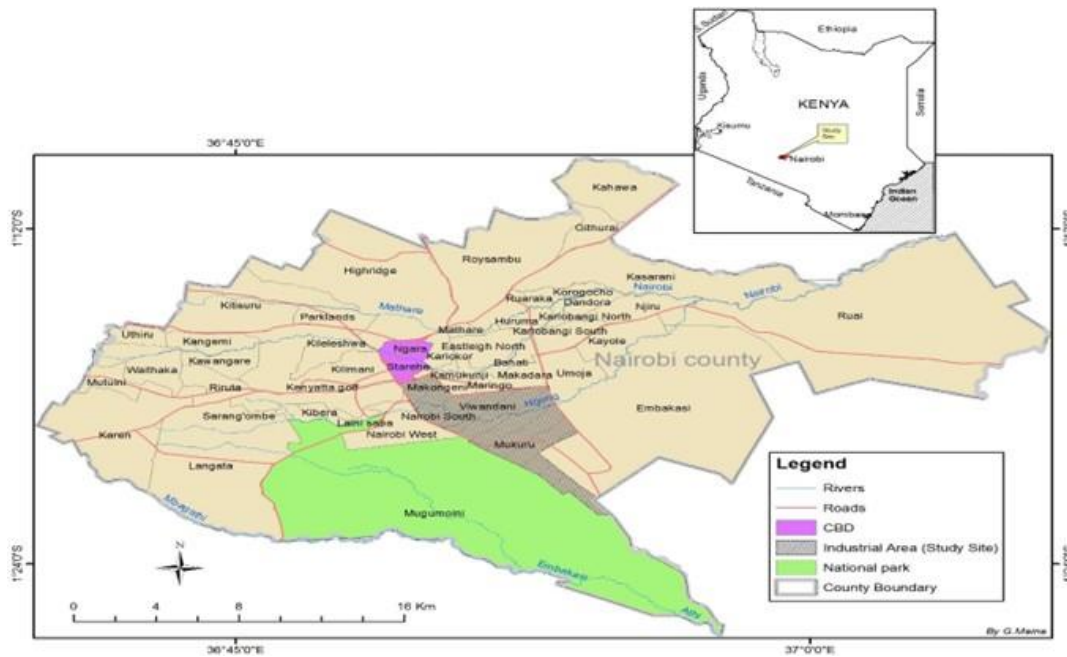
## **MATERIALS AND METHODS**

### **2.1. The Study Area**

Our study area, Nairobi is the capital city of Kenya being the main industrial city in the country and it was purposively chosen since it has the largest number of vehicle body manufacturing firms which are located in

the South Eastern part of Nairobi. Nairobi City that lies at a longitudes  $36^{\circ} 45'$  East and latitudes  $1^{\circ} 18'$  South with an altitude of 1,798 metres above sea level. It is the most populated town in Kenya thus enabling availability of skilled labour that is required for the industry. In recent years, due largely to rapid urbanization, the city has witnessed emergence of many vehicle manufacturing companies which has been a key employer to many households in the city. Figure 1 illustrates the map of Nairobi indicating the study Sites.

**Figure 1. Map of Nairobi Indicating the Study Site.**



Source: Survey of Kenya (2015)

## Research Design

A cross-sectional research design, sometime called cross-sectional analysis, was used to collect and analyze data from a sample of four major motor vehicle body manufacturing companies in Nairobi. The occupational health and safety needs and requirements were collected from the firms' workers and managers.

## Data Collection and Analysis

To get some better insights into the knowledge, attitudes and perceptions of workers on safety hazards and health risks in vehicle body manufacturing companies, we conducted a questionnaire survey among vehicle body manufacturing workers in Nairobi in October 2022. The study population were workers from the four major vehicle body manufacturing companies. Prior to data collection, the researcher conducted a preliminary survey of the motor vehicle body manufacturing firms within Nairobi in order to plan effective strategies for data collection.

Permission to conduct research was formally sought and official authority was obtained before carrying out the study. These included; the management of the four companies, Egerton University Board of Post Graduate Study, Bio- Ethics Committee of Egerton University under Division of research and Extension, and the Nairobi County Commissioner and the National Commission for Science and Technology and Innovation (NACOSTI). We distributed the questionnaire among 260 workers in the four companies by using a simple random sampling method and obtained 260 valid responses.

The questions were divided into two parts. The first part attempted to identify the socio-demographic characteristics of the respondents. This included age, sex, marital status, job experience and education qualifications. The second part tried to understand the knowledge, attitudes and perceptions of workers on safety hazards and health risks in vehicle body manufacturing. The collected responses were cleaned, edited, coded and entered using Statistical Package for Social Sciences (SPSS version 23) for analysis. The analysis was done using descriptive and inferential statistics such as frequencies, percentages, means and standard deviation.

## RESULTS AND DISCUSSION

### 3.1. Socio-Demographic Characteristics of the Respondents

The descriptive results in table 1 revealed that 93% of the worker were male and only 7% were female. This suggests that this industry is dominated by men compared to women. Regarding the age bracket, most of the workers were between the ages of 30-39 years and 40-49 years with a percentage of 53% and 24% respectively. This is also linked to the level of experience whereby the majority (40%) had worked between 6-10 years.

This indicate that they had experience in the industry and they would give suitable information regarding occupational health and safety needs and requirements in vehicle body manufacturing industry. Regarding education, we found that all the respondents had some form of education. Among them, 49% had completed secondary education. About 24% and 12% had completed diploma and primary education, respectively. Table 1).

**Table 1.1 Socio-demographic characteristics of respondents**

Description of variables	Frequency (n)	Percentage (%)
<b>Age range of respondents (n = 260)</b>		
20 – 29 years	52	20.0
30 – 39 years	137	52.7
40 – 49 years	62	23.8
50 – 59 years	9	3.5
<b>Sex (n = 260)</b>		
Female	19	7.3
Male	241	92.7
<b>Marital status (n = 260)</b>		
Single	51	19.6
Married	209	80.4
<b>Years of working experience (n = 260)</b>		
1-5 years	68	26.2
6-10 years	104	40.0
11-15 years	58	22.3
16-20 years	21	8.1
Above 20 years	9	3.5
<b>Educational qualification (n = 260)</b>		
Primary	32	12.3

Secondary	127	48.8
Certificate	15	5.8
Diploma	62	23.8
Graduate	24	9.2

### Need and reason for occupational health risks and safety hazards

Most of the respondents agreed on the opinion that there was need for occupational health risks and safety hazards to be reported to the administration and that they had to be made aware of such occurrences in the workplaces. However, only 20.4% found it not necessary to inform the administration due to the processes and slow uptake of the cases. This could be attributed to the management concern about the cost that is involved on compensation when injuries are reported by the workers. On the other hand, the staff may be hesitant to report minor injuries to avoid being reprimanded and victimization by the supervisors.

Of the respondents who were for the opinion of letting the administrative know of the risks involved, majority of them (29.6%) argued that this will make their employers improve on the safety and health management. If they are not made aware, then their employers will not see the need of coming up with proper administrative controls and programs for them such as medical covers that will, aid them in case they face such hazards. The respondents also argued that, by informing their management of such occurrences, they expect that there will be adequate supervision from their seniors and more training conducted in the companies to guide them through the use of machines in order to handle such challenges.

**Table 1.1: Respondents’ need and reason for occupational health risks and safety hazards**

Need	Frequency	Percentage (%)
Yes	207	79.6
No	53	20.4
Reason		
Enforcement of PPE usage	22	11.2
Improved personnel management	99	50.5
Supervision and training	58	29.6
All the above	17	8.7

### Measures for mitigation of hazards

Majority of the respondents (48.5%) in Table 4.10 below strongly agreed that adequate/ appropriate use of PPE is a mitigation measure against hazards used by bus manufacturing companies. Of the respondents who strongly agreed on different measures of mitigation of hazards, 45.4% strongly agreed that training and awareness was a preventive measure used, 39.2% strongly agreed on workplace inspection measures, 35.8% strongly agreed on availability of first aid while 35.0% strongly agreed on hazard identification as mitigation of hazards in the workplaces. Respondents also agreed at 36.5% that keeping work place tidy and incident and accident reporting and registering is a mitigation measure used in their respective workplace. 36.2% and 34.6% of the respondents also agreed that mitigation of hazards through adequate supervision in the workplace and presence of fire extinguishers respectively were used. This indicates that most of the workers have considerable knowledge on occupational safety and health practices.



**Table 1.2: Preventive measures in the mitigation of hazards**

Statements	SD%	D%	N%	A%	SA%	Mean	SD
Training and awareness	1.5	6.7	4.6	41.5	45.4	4.22	0.93
Adequate/ appropriate use of PPE	0	11.5	9.6	30.4	48.5	4.16	1.01
Fire extinguishers	0	0.8	30.4	34.6	34.2	4.02	0.82
Hazard identification	0	4.2	26.9	33.8	35.0	4.00	0.89
Availability of First Aid	1.2	2.3	28.1	32.7	35.8	4.00	0.92
Keeping work place neat and tidy	0	4.6	27.3	36.5	31.5	3.95	0.88
Incident and accident reporting and registering	0	8.5	22.7	36.5	32.3	3.93	0.94
Adequate supervision	0	15.4	26.9	36.2	21.5	3.64	0.99
Work place inspection	1.2	21.9	17.3	20.4	39.2	3.75	1.22

\*1= Strongly disagree, 2= Disagree, 3= No opinion, 4= Agree, 5= Strongly agree

### Use of PPE in prevention of risks

Table 4.11 below indicates opinions of the respondents on the use of PPEs in prevention of risks associated with safety and health hazards. 50.0% and 39.6% of the respondents strongly agreed that wearing of safety boots reduces damage to the feet and wearing of gloves reduces damage to their hands respectively. 45.0% and 38.5% of the respondents agreed that wearing of masks reduces damages to respiratory organs and wearing of aprons reduces damages to the body. In addition, respondents agreed that wearing of ear plugs reduces damages to ears (45.2%), wearing of goggles reduces damages to eyes (43.8%), carrying out risk assessments increases the use of PPEs in prevention of risks by bus manufacturing companies (38.5%), bathing after work reduces damages to health risks (37.3%) and while washing hands reduces chemical risks (35.4%). This indicates that a reasonable number of the workers are familiar with the use of necessary PPE as a preventive measure against injuries and occupational illnesses.

**Table 1.3: Opinion of respondents towards use of PPE in prevention of risks**

Statements	SD%	D%	N%	A%	SA%	Mean	SD
Wearing gloves can reduce damage to your hands	8.8	6.9	5.8	38.8	39.6	3.93	1.24
Wearing masks can reduce damage to respiratory organs	0	0.8	16.9	45.0	37.3	4.19	0.74
Wearing safety boot can reduce damage to your feet	0.8	0.8	10.0	38.5	50.0	4.36	0.76
Wearing apron can reduce damage to your body	3.1	13.1	18.8	38.5	26.5	3.72	1.09
Wearing goggles can reduce damage to your eyes	0	3.1	14.2	43.8	38.8	4.18	0.79
Wash hand can reduce risks from chemicals	1.2	14.2	25.0	35.4	24.2	3.67	1.03
Bathing after work can reduce damage to health risks	1.2	16.2	30.0	37.3	15.4	3.50	0.98
Wearing ear plugs can reduce damage to your ears	0	3.5	15.0	45.2	35.4	4.13	0.79
Carrying out risk assessment	0	11.5	18.1	38.5	31.9	3.91	0.98

\*1= Strongly disagree, 2= Disagree, 3= No opinion, 4= Agree, 5= Strongly agree

### Solutions to improving safety and health obstacles

Results in Table 4.12 below shows that majority of the respondents noted that vocational/technical training (53.8%) was given the highest priority among solutions to improving safety and health hazards in bus manufacturing companies. Vocational and technical training provides a systematic education that imparts

skills in a specific field and such enhances the safety knowledge of a staff. The response shows that a sizable number of staff are aware of this and most likely have attended such training. 48.1% of the respondents indicated that workplace safety and health training were essential in improving safety and health standards in bus companies, 43.8% indicated that provision of more PPEs should be given high priority while others felt that upgrading equipment//technology and collaboration between the bus manufacturing companies and government agencies and other stakeholders should be given medium priority (33.1% and 38.1%) respectively when aiming to improve safety and health standards. The work place safety and health training that are tailored the industry need is more effective as compared to a general training as indicated by the level of workers’ awareness. Giving high priority to availability of suitable PPE reduces chances of injury and thus contributes to high productivity. Collaboration with government agencies such as DOSHS would enforce the application of occupations safety and health regulations in this industry. Upgrading equipment and technology would reduce manual handling that lead to more worker fatigue and a new equipment is likely to be faster thus enhancing production.

**Table 1.4: Solutions to improving safety and health obstacles**

Statements	NA%	LP%	MP%	HP%	E%	Mean	SD
Workplace safety and health training	0	2.3	3.5	46.2	48.1	4.40	0.67
Provision of more PPE	1.2	1.2	17.3	43.8	36.5	4.13	0.82
Collaboration with government agencies and other stakeholders	0.4	6.2	38.1	28.1	27.3	3.76	0.94
Upgrading equipment / technology	0.8	5.8	33.1	31.2	29.2	3.82	0.95
Vocational / technical training	0.8	7.7	16.2	53.8	21.5	3.88	0.86

\*1= Not a priority, 2 = Low priority, 3= Medium priority, 4= High priority, 5= Essential

## CONCLUSION

This paper investigated the knowledge, attitudes and perceptions of workers on safety hazards and health risks in vehicle body manufacturing companies in Nairobi County, Kenya. Majority of the employees’ knowledge, attitudes and perception of workers was highly dependent on management commitment and support for workplace safety and health. The majority of workers agreed that workplace and safety hazards needed to be reported to management. Nonetheless, majority enlisted improved personnel management and supervisions as well as training as an important reason that would help improve on their perception on occupation safety and health hazards. The majority of respondents fervently advocated for the use of PPE and training as an essential risk-mitigation strategy by vehicle body manufacturing companies. This study suggests that in order for the knowledge, attitude and perception of workers on occupational safety hazards and health risks to improve in the vehicle body manufacturing companies it is essential for companies to improve on the technical and health training, adequate use of PPEs, upgrading equipment and technology and collaboration of these companies with other agencies. Also, it is essential to recognize that improving worker knowledge, attitudes, and perceptions towards safety hazards and health risks is an ongoing process that requires continuous monitoring and improvement efforts. By addressing the gaps in worker knowledge and attitudes towards safety hazards and health risks, vehicle body manufacturing companies in Nairobi County can help to create a safer and healthier workplace for all workers. Since Safety and health is a culture it is recommended that the Government includes this training in secondary schools and post-secondary training institutions. It is also recommended that the Government department charged with work place safety oversight to deliberately schedule and train the vehicle body manufacturing workers on safety related to this industry.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

## REFERENCES

1. Bakri, M. (2019). The impact of safety attitudes and safety awareness on accident prevention in the workplace. *Journal of Occupational Health and Safety, Australia and New Zealand*, 35(6), 543-551.
2. Gichunge, E. M., Kago, Z. W., & Baimwera, B. (2018). Relationship between competitive strategies and organizational performance of petroleum companies in Kenya. *International Academic Journal of Human Resource and Business Administration*, 3(2), 407-429. [http://www.iajournals.org/articles/iajhrba\\_v3\\_i2\\_407\\_429.pdf](http://www.iajournals.org/articles/iajhrba_v3_i2_407_429.pdf)
3. Gichuru, P., Gitonga, L., & Kahuthia-Gathu, R. (2019). Attitudes and perceptions of workers towards occupational health and safety in manufacturing industries in Kenya. *International Journal of Occupational Safety and Ergonomics*, 1-11.
4. Government of Kenya. (2007). *Occupational Safety and Health Act*. Nairobi: Government Printer. [http://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/Occupational SafetyandHealth\(No.15of2007\).pdf](http://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/Occupational%20SafetyandHealth(No.15of2007).pdf)
5. Kariuki, D. (2020). An assessment of the automotive industry in Kenya. *African Journal of Business and Management*, 6(1), 1-11.
6. Kipruto, G., Kihunrwa, A., Kibaara, G., & Kiilu, E. (2020). Knowledge, attitudes and practices on occupational hazards among employees in the manufacturing industry in Kenya. *Journal of Environmental and Occupational Science*, 9(1), 30-38.
7. Otieno, R. W., & Ngure, V. (2019). The prevalence and determinants of occupational injuries among workers in the automotive industry in Nairobi, Kenya. *Journal of Occupational Health and Safety, Australia and New Zealand*, 35(4), 375-384.