

Enhancing Manufacturing Employee Productivity: The Role of Safe Work Environment, Adequate Workload, and Supervisor Support

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Abstract

This study is conducted in the manufacturing sector located in Calabarzon Batangas, where organizations and managers are increasingly concerned about low productivity output in the company XYZ. Organizations continue to face challenges in improving employee productivity despite implementing various action plans and strategies. Addressing this issue is crucial, as employee productivity directly affects the company's financial health and competitive advantage. The objective of this research is to examine the effect of work environment factors such as safe work environment, adequate workload, and supervisor support on employee productivity in the manufacturing sector. The research methodology used in this study is quantitative. Employees of a selected manufacturing company will be given a structured questionnaire to complete in order to gather primary data. 150 employees were chosen through random sampling. Multiple regression analysis and correlation will be used to analyze the data in order to assess at the relationships between the research variables. This methodological technique guarantees the research's academic rigor and viability. By analyzing how safe work environment, adequate workload, and supervisor support effect worker productivity in the manufacturing industry, this study provides both academic and practical applications. The findings will help managers and organizations in implementing workplace improvements that increase worker well-being and productivity, ultimately leading to higher operational efficiency and sustainable business performance.

Keywords: Safe work environment; adequate workload; supervisor support; productivity; manufacturing sector

1. Introduction

1.1 Background of the Study

Manufacturing industry refers to the sector involved in the production of commodities on a large scale, that make use of various processes and technologies to transform raw materials into finished goods that can be used to meet a need or expectation from consumers. Employee productivity is the outcome of the effort exerted by workers, taking into account the available time and the work environment. This is used to measure the efficiency and the effectiveness of an employee to accomplish the common organizational goals and drive the company profitability. When employee productivity has met its optimal potential, it leads to competitive advantage of an industry (Ariani et al., 2024). According to Alkhawaldeh et al., (2025) the global productivity was getting worse particularly in middle east countries. In the Philippines, the manufacturing industry is the second-largest sector, contributing 16.22% of the Gross Domestic Product of the nation in 2023. With a gross domestic

product (GDP) contribution of about 3.78 trillion Philippine pesos in 2023. According to Mapa (2025) “The average capacity utilization rate for the manufacturing sector in November 2024 was reported at 75.6 percent from the 75.8 percent average capacity utilization rate in the previous month”. This indicates that 23% of the 517 responding establishments did not achieve the required resource output. Capacity utilization is related to productivity, when people produce low output, it directly contributes to low-capacity utilization (Tang & Wang, 2023).

The study will be conducted in Company XYZ, a manufacturing firm located in Batangas, Philippines. The company operates in the manufacturing sector and produces goods for the local and international market. For confidentiality purposes, the organization is referred to as Company XYZ throughout this study. Its production processes rely heavily on manual and machineries labor rather than full automation. Key operational activities include material handling, assembly, machining process, and quality inspection. Due to this structure, employee effort and performance are crucial to achieving production targets. The company employs a significant number of workers whose productivity directly influences operational efficiency. As a result, human resources remain a critical factor in the company’s overall performance. Like many manufacturing firms in the Philippines, Company XYZ faces increasing pressure to improve productivity amid rising costs and market competition. Despite investments in equipment and employee well-being, the company continues to encounter challenges in consistently meeting productivity goals. Manufacturing organizations rely heavily on employee efficiency, coordination, and physical working conditions, making the work environment a critical factor in productivity. The study highlights key environmental elements such as workspace design, safety, and comfort, which are also central concerns in manufacturing settings. By examining this study, the target manufacturing company can better understand how environmental factors affect employee performance. The findings can guide management in improving factory layouts, safety standards, and overall working conditions. Improved work environments can lead to increased employee motivation, reduced fatigue, and higher production output. Additionally, applying these insights may help reduce workplace accidents and employee turnover in manufacturing firms. The study also serves as a benchmark for comparing productivity challenges across different sectors. Overall, the research is worth studying because it provides practical and transferable knowledge that can support productivity improvement initiatives in the manufacturing industry.

This study is adapted from Elaho and Odion (2022), who examined the effect of the work environment on employee productivity in a service-based setting. By applying their framework to a manufacturing context, This research aims to provide useful information for other similar industries.

The purpose of this research paper is to examine the influence of various work environment factors. The work environment encompasses all of the interactions between representatives and enterprises as well as the environment in which they operate, which includes the specialized, human, and authoritative climates. According to Elaho and Odion (2022), work environment factors include safe work environment, adequate workload, and supervisor support.

Literature Review

Safe work environment can be created by having appropriate training, provision of engineering controls and operating in standard work (Tibbitt, 2022). A safe work environment encompasses not only the physical conditions but also the behavioral dynamics within the workplace (Zhenjing et al., 2022). It is crucial for employee retention and to the interest of new applicants (Malicay & Gano-an, 2023). According to Schneider et al., (2022) Protecting individuals for any hidden hazardous substances may be achieved by having a safe work environment. It is a corporate social responsibility of a company to minimize the risk of injuries or illness which can lead to demotivation and decrease in employee productivity (Amaliyah & Nurhadiyati, 2024). Ensuring that workers can perform their tasks efficiently while minimizing risks and promoting the well-being of both workers and machines contributes to a safe working environment (Borboni et al., 2023)

In BPO sector studies of Malicay and Gano-an (2023) found out that work environment is significantly affecting employee productivity. According to Prasojo and Sibarani (2025) unsafe working conditions lead to poor performance. The effect of safe working conditions in a retail sector was found to have an effect on employee satisfaction and commitment (Vukmirovic et al., 2023). While

some of the research found that the providing more conducive work environment is not significantly affects the employee performance (Fikri et al., 2024; Lebrata et al., 2024)

Workload is a set of tasks that must be accomplished by the worker within the specified time (Prasetyo & Gumilar, 2024). Any problems occur during working hours that resulted to mental fatigue is considered part of employee workload (Al Kahfi & Irbayuni, 2024). Likewise, according to study of El-Sherbeeney et al., (2024) it can be in a physical manner at the same time a psychological and mental. Workload is changeable that depends on the situation which requires an extra effort from the employee (Rachmayanti & Fauzi, 2024). Moreover, an increase of pressure comes from leaders affects the workload (Pertiwi & Prena, 2024)

According to Herdiana and Sary (2023) they found at through their study with 110 respondents that workload significantly affects employee performance in manufacturing industry. Likewise, Herawati et al., (2023) study resulted to positive significant effect of workload to job satisfaction and job performance. In addition, Anjanarko et al., (2022) found out that the capacity of an employee not only influences productivity but also the workload and compensation. In the study of Salsabila et al., (2024) to millennial workers, productivity will be uncontrolled if the workers has work below the requirement thus workload significantly affects productivity. However, the study of Putra et al., (2024) in food company resulted to insignificant effect of workload in employee performance

Supervisor support came from the direct supervisor of an employee that creates motivation and positive behavior in the work environment (Ustun & Ustun, 2023). They are the one who drives the organization's success by leading and supporting the employee (Wu et al., 2025). According to Penning de Vries et al., (2022) Supervisor's main role is to support their people despite the numerous tasks, the priority is always the needs of the people. It helps the new member of the organization to prosper in career development and be ready to cope up with the professionalism inside the workplace by being a good example leader (Ali et al., 2022). The supervisor role is anchored on self-determination theory, where people can feel the connection of every person in the environment, the people are equipped with proper skills and knowledge, and the people are empowered to make decisions (Wollast et al., 2023). Similarly, the findings of Malicay and Gano-an (2023) and Herawati et al., (2023) demonstrated a positive and significant effect of supervisor support on employee performance.

The study conducted in the manufacturing sector in Pakistan resulted in low quality output and performance of the company due to ineffective supervisor support by limiting coaching to people (Mehmood, 2024). In the academic field a supervisor's support increases the productivity of a doctoral student doing the research project according to the study of Khuram et al., (2023). Furthermore, a study by Darmawan and Alawiyah (2024) found that perceived supervisor support significantly impacts employee performance through increased work engagement in a flexible work set up. Likewise, a study about interns having full support of supervisors with regards to providing mentoring and training resulted in the success of their career (Ali et al., 2022).

Over the past years, organizations have increasingly recognized the importance of providing an optimal work environment to foster employee well-being, motivation, and productivity (Phalevi & Digdowiseiso, 2024) The relationship between work environment safety, supervisor leadership, and employee productivity has gathered increasing attention in business research. Safe work environments are fundamental to maintaining both physical and psychological well-being, which in turn can lead to improved employee commitment and performance (Zhenjing et al., 2022) on the other hand, supervisor support plays a critical role in employee satisfaction, thereby influencing employee performance (Ji et al., 2024). Although both of these determinants have been studied separately regarding the effect on productivity, there are a few studies about how supervisor leadership and work environment safety interact to affect worker performance through productivity.

Significance of the Study

The study aims to determine the effect of the factors used in the study by Elaho and Odion (2022) on employee productivity in the manufacturing company XYZ, with the goal of helping the company operate effectively and efficiently, ultimately leading to increased profitability. The study will make a

significant contribution to the existing body of literature within the academic field by providing new observations, addressing gaps in current research, and offering a deeper understanding of the topic regarding the determinants of productivity in manufacturing sector, subsequently enhancing scholarly discourse and supporting future research and developments in the area of study that will serve as basis of future researchers. Understanding these factors is crucial for developing strategies to promote well-being, decent work, and economic growth in the manufacturing industry in the Philippines, through significant improvements in labor productivity, in order to support the Global Goals or Sustainable Development Goals (SDGs). This study is anchored on Scientific Management Theory, which explains that productivity improves when work is properly managed, tasks are well-designed, and employees are supported. In this study, safe work environment, workload, and supervisor support represent key elements of effective work management. By ensuring safety, balancing tasks, and providing proper guidance, employees can work more efficiently, leading to higher productivity. This study adapted the conceptual framework of Elaho and Odion (2022) without introducing additional variables to maintain the original theory and research design. The framework developed by Elaho and Odion has been empirically tested and validated in examining the relationship between work environment factors and employee productivity. By retaining the original variables, the present study ensures alignment with an established model and avoids unnecessary modification that could affect the consistency of the theoretical framework.

Moreover, the primary purpose of this research is to examine the applicability of the existing framework in a different organizational context rather than to construct a new model. While Elaho and Odion (2022) focused on business centers within a university setting, this study applies the same framework to a labor-intensive manufacturing company. This approach allows for meaningful comparison of findings across sectors. Limiting the variables also ensures focus and feasibility within the scope of the study while adequately addressing the research objectives. Furthermore, the selected work environment factors are among the most cost-effective and sustainable ways to enhance employee productivity. By focusing on these variables, the study ensures practical relevance to organizational practice while maintaining alignment with an established, empirically supported model. Most studies that deal with work environment and leadership support that being the determinants of productivity in manufacturing (Elaho & Odion, 2022; Karyatun et al., 2023; Hidayat & Tedi, 2023; Panjaitan & Hidayat, 2023) Thus, by examining the effect of supervisor leadership and workplace safety on worker productivity, this study will contribute to the current gap findings.

This study delves into the determinants of manufacturing sector productivity particularly safe workplace, adequate workload, and supervisor support. The research frameworks covered in the next section will serve as a guide in the conduct of study.

1.2 Research Frameworks

The researcher will adapt the conceptual framework put forward by Elaho and Audion (2022) in their research entitled “The Impact of the Work Environment on Employee Productivity: A Case Study of Business Centers in the University of Benin Complex”. This is illustrated in Figure 1. Said analyzed the impact of the work environment on employee productivity. The study used a descriptive and quantitative methodology. Data was gathered from the target sample of 147 business centers registered on the University of Benin Ugbowo campus. The study used questionnaires using a 5-point Likert scale. Regression t test was also performed to test the hypotheses. Work environment variables such as safe work environment, workload, and supervisor support were tested individually to measure each variable impact to employee’s productivity.

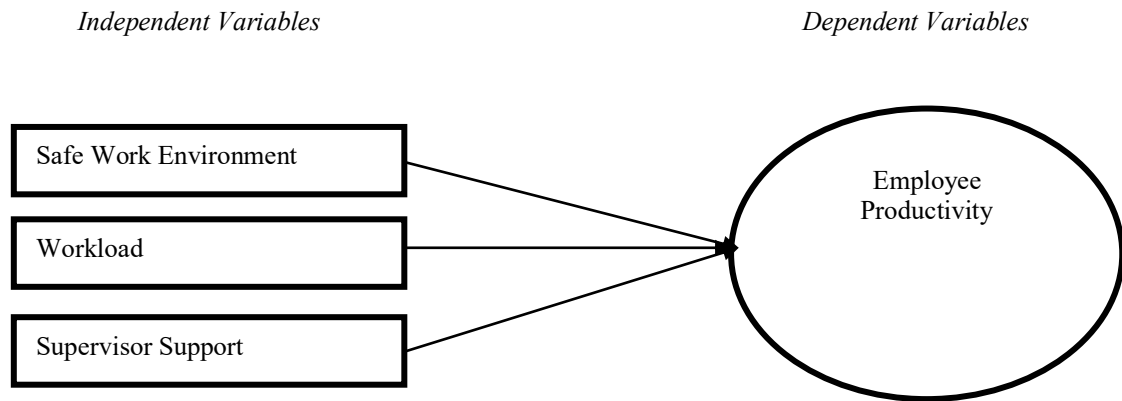


Figure 1. Conceptual Framework

Source: The Impact of Work Environment on Employee Productivity: A Case Study of Business Centers in University of Benin Complex (Elaho & Audion, 2022)

A safe work environment is the condition of being protected from risk or damage. A sheltered and agreeable workplace causes employees to feel great about coming to work and this gives the inspiration to continue them for the duration of the day. A workplace that is open and steady will cause the employees to feel that it is a protected climate, which will make the employees more dedicated to their work. Workload refers to the amount of work or tasks that are assigned to an individual and the manner in which that work is handled or perceived. It is a source of psychological distress for workers. Workload delegation fails due to unutilized human capabilities and failure to assess the worker optimal potential. Supervisor support refers to an employee's perception of the extent to which their supervisors appreciate their efforts and prioritize their welfare. Also referred to as supervisor consideration, it pertains to the level of support that supervisors provide to their employees or subordinates by acknowledging their efforts and contributions.

Elaho and Audion (2022) found that that work environment has significantly affected employee productivity. The variables tested; safe work environment, workload, and supervisor support all have a significant effect on employees' productivity. As their p-value result is lower than Alpha value of 0.05. Safe work environment has Sig. of 0.044, workload has Sig. of 0.008, and supervisor support has Sig of 0.004. Therefore, independent variables that was tested have a substantial impact on employee productivity.

The current study will adapt the operational framework illustrated in Figure 2.: The purpose of the study is to analyze the effect of the safe work environment, adequate workload, and supervisor support on employee productivity in manufacturing companies in the Philippines herein referred to as Company XYZ. The respondent of the survey will be coming from the manufacturing area of Company XYZ specifically to technician level because they are exposed in the working environment and their labor hours affect the productivity report shown in needs assessment.

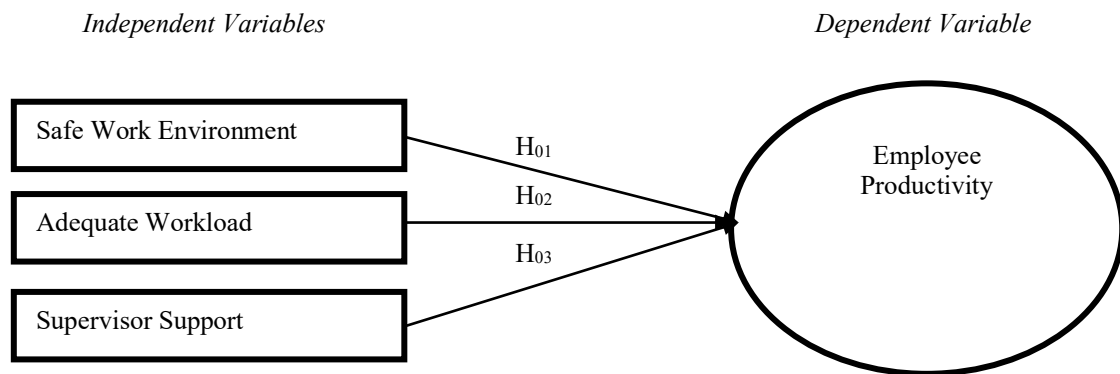


Figure 2. Operational Framework

The independent variables in this study are safe work environment, adequate workload, and supervisor support. Safe Work Environment refers to the extent to which the workplace provides safety measures established by management to ensure employee security and well-being. It includes the presence of proper environmental conditions such as adequate lighting, ventilation, temperature, and noise control, as well as the availability of well-maintained equipment. A safe work environment supports employee safety, enhances focus, and promotes effective job performance. Adequate workload refers to the extent to which the tasks assigned to employees are aligned with their work capacity, are manageable, and are appropriately adjusted in response to improvements in the work environment. It also includes the organization's support for work-life balance and the promotion of employee morale, health, and performance through the provision of a reasonable workload. Supervisor support refers to the relationship existing between the respondent and his immediate superior as a result of the former providing adequate supervision, effective communication and training, and clarity of assignment. Employee productivity refers to the different factors of the work environment such as the effect of facilities, workload, learnings in the environment and the influence of supervisors that might affect the employee's productivity such as status of equipment, workload commitment, willingness of employee, and working environment behaviors influenced by supervisors.

1.3 Objectives of the Study

In general, this study is focused on examining the effect between safe work environment, adequate workload, supervisor support and employee productivity. Specifically, it intends to:

1. To describe safe work environment, adequate workload, supervisor support and employee productivity.
2. To assess the direct effect of safe work environment, adequate workload, and supervisor support on employee productivity.
3. To identify strategies and action plan to improve employee productivity.

1.4 Hypotheses

The hypotheses below will be tested in this study:

H₀¹: The safe work environment does not significantly affect employee productivity.

H₀²: The adequate workload does not significantly affect employee productivity.

H₀³: The supervisor's support does not significantly affect employee productivity.

2. Methods

This section describes the procedures and approaches employed to obtain the findings of the study. It provides a clear account of the following: a) the research participants or subjects, including the study population, sampling strategy, and sample size b) the research design c) the instruments, tests, or data collection methods used d) the procedures applied for data analysis.

2.1 Research Design

The research study will use a descriptive and correlational research design. The descriptive approach aims to systematically describe the perceptions of the respondents regarding their work environment. The correlational aspect of the study seeks to examine the relationships between a safe work environment, adequate workload, supervisor support, and employee productivity. Through this design, the study will determine whether and to what extent these variables are associated with one another.

2.2 Locale of the Study

The target respondents of the study are Filipino employees of Company XYZ, a manufacturing company located in Batangas City. The organization operates multiple departments, including both office and production units. The study will be conducted across all departments to ensure that employees from diverse roles are represented. The departments consists of 170 employees, which forms the population of the study. The selection of this locale is significant because Company XYZ reflects the typical structure and work environment of manufacturing firms in the region. Including employees from both office and production areas allows for a holistic understanding of workplace conditions. This approach ensures that differences in adequate workload, supervisor support, and safety practices across departments are captured.

2.3 Respondents of the Study

The participants in this study are employees working in the manufacturing Company XYZ for the last 6 months prior to the conduct of the study, either with hands-on experience in the assembly process, operating various types of machinery or performing tasks inside the office area. These individuals are familiar with safety protocols, quality control measures, and have demonstrated the ability to adapt to changes in production schedules and machinery improvements during their time in the workplace. They were selected based on insights gathered during a needs assessment, which revealed concerns about their workplace environment. Given that these employees spend over 10 hours per day on the shop floor and office, their workplace environment ultimately could have an effect on their productivity.

2.4 Sampling Design

Using G power analysis with the effect size of 0.15 an error probability of 0.05 power of $1 - \beta = 0.95$ and three predictors a minimum of 119 samples are needed for the study. Stratified random sampling will be employed to ensure proportional representation of different employee groups. Respondents were divided based on the following criteria:

Table 1 Stratified Distribution of Respondents per Team

Population	No. of Respondents
Process 1 - 10	96
Engineers	12
QA / Docs Control	12
Planner / SCM	10
Trainer / SME	12
Grand Total	142

To ensure the completeness of responses and to account for possible non-responses or invalid entries, five additional samples per department were introduced except for process operation which allotted additional four, raising the total distributed questionnaires to 142. This adjustment helped to ensure that the target sample size of 119 valid and complete responses was achieved.

2.5 Data Gathering Procedure

Ethical clearance was obtained from the Research Ethics Review Council of De La Salle Lipa prior to the commencement of data collection. Approval and the required signatory from the Human Resources (HR) department of the participating company were also secured before proceeding. A one-week coordination period was observed following the approval process. After this period, the survey questionnaire was distributed through both Google Forms and a printed (Word format) version, as requested by HR. This dual mode of distribution was implemented to accommodate different work conditions of the respondents. Office-based employees were able to access and answer the survey via desktop computers. Meanwhile, production staff were provided printed copies due to limited access to computers during work hours. The HR department was informed regarding the stratification of respondents, as presented in Table 1. After one month, responses from the Google Forms were retrieved, while printed questionnaires were collected and manually encoded. All gathered data were then consolidated and forwarded to the statistician for analysis in accordance with the study requirements.

2.6 Research Tools and Instruments

The survey questionnaire was adapted and revised from the studies of Elaho and Odion (2022) and Pimpong (2023). The questions were rewritten in a positive way to better fit this study. The 4-Likert scale questionnaire seen in appendix D is composed of a total of 22 questions. As seen in Table 2, the variables of interest have the corresponding number of questions: 5 for a safe work environment, 5 for adequate workload, 5 for supervisor support, and 7 for employee productivity.

Table 2. Questionnaire Specification

Construct	Label	Scale
Safe work environment	SW1	(1) Strongly disagree to (4) Strongly agree
	SW2	
	SW3	
	SW4	
	SW5	
Adequate Workload	WL1	(1) Strongly disagree to (4) Strongly agree
	WL2	
	WL3	
	WL4	
	WL5	
Supervisor support	SS1	(1) Strongly disagree to (4) Strongly agree
	SS2	
	SS3	
	SS4	
	SS5	
Employee productivity	EP1	(1) Strongly disagree to (4) Strongly agree
	EP2	
	EP3	
	EP4	
	EP5	
	EP6	

To ensure the reliability of the questionnaire, the researcher will conduct a pretest by administering the survey questionnaire among 30 respondents from the Manufacturing Company ABC. The purpose of pretest is to derive Cronbach alpha; Cronbach's alpha is a measure of the internal consistency meaning how closely related a set of items are as a group and append the final form of the questionnaire

2.7 Data Analysis and Interpretation

The following statistical tools will be used to summarize the data:

The frequency and percentage distribution will be used to summarize the data gather in the survey questionnaire. As seen in Table 3, the mean shall be used to summarize the responses on variables with the verbal interpretation of

Table 3. Mean Ranges of Verbal Interpretation-level of the variables

Safe work environment, adequate workload, and supervisor support	Dynamic Environment	Mean Range	Employee's Productivity
<i>Strongly Agree</i>	Very High	3.50 – 4.00	Very High
<i>Agree</i>	High	2.50 – 3.49	High
<i>Disagree</i>	Low	1.50 – 2.49	Low
<i>Strongly Disagree</i>	Very Low	1.00 – 1.49	Very Low

Regression analysis was used to assess the effects of a safe work environment, adequate workload, and supervisor support on employee productivity, determining both the strength and direction of each variable's influence. Key outputs included coefficients (β), p-values, and the R-squared (R^2) value. Standardized coefficients were utilized to compare the relative impact of each independent variable, while p-values determined statistical significance using a 0.05 threshold, with values below this level considered significant. The R-squared value indicated the proportion of variation in employee performance explained by the model. Overall, the analysis identified the most influential multiskilling practice affecting employee performance.

The reliability of the study was computed using the Cronbach Alpha value, and the overall Cronbach coefficient for the study was 0.953, as shown in Table 4. Reliability coefficients of 0.70 and above are generally considered acceptable and indicate satisfactory internal consistency (Polat et al., 2025). The overall Cronbach alpha shows that the research instrument for the study was highly statistically reliable. The data was retrieved, cleaned and inspected, to ensure that they are reliable for the study. The study used the SPSS software to analyze the data presenting it in a table format showing frequency and percentages.

Table 4 Reliability test result of instrument

Variables	No. of Items	Cronbach's alpha	Remarks
Safe Work Environment	5	0.878	acceptable
Adequate Workload	5	0.869	acceptable
Supervisor Support	5	0.888	acceptable
Employee Productivity	7	0.879	acceptable
OVERALL		0.953	

2.8 Statistical Treatment of Data

Using SPSS Statistics, the collected data were analyzed in this study. Descriptive statistics were employed to present the respondents' demographic profiles and to summarize their perceptions of a safe work environment, adequate workload, supervisor support, and employee productivity. In addition, multiple linear regression analysis was conducted to examine the extent to which the identified work environment variables influence employee productivity.

2.9 Ethical Considerations

The research study will adhere to the ethical guidelines established by De La Salle Lipa, ensuring that participants are fully informed of their rights and the voluntary nature of their participation. All participants from Company XYZ will provide informed consent prior to their involvement, and their privacy will be prioritized with careful handling of their data. Additionally, the researcher will seek review and clearance of the study from the Research Ethics Clearance Committee of DLSL. Participants will also have the option to withdraw at any time, ensuring their voluntary participation. Throughout the study, impartiality will be maintained in all interactions, and communication will be

clear, honest, and transparent. The online survey will be conducted in accordance with the Office of Research and Publication's Ethical Guidelines for Online Survey Design.

3. Results and Discussion

This chapter presents the results of the study examining the effects of a safe work environment, adequate workload, and supervisor support on employee productivity. Data collected through the survey questionnaire were systematically analyzed to determine the extent to which these independent variables influence the dependent variable, employee productivity. Appropriate statistical tools were employed to assess the strength, direction, and significance of these relationships. The findings provide a clear basis for understanding how workplace conditions and managerial support contribute to enhancing employee productivity.

3.1 Descriptive Statistics

The focus of this study was to collect demographic information about the technicians working on the manufacturing shop floor at Company XYZ. A total of 142 employees participated, giving a 100% response rate. Of these, 57.7% were male and 42.3% were female. Most respondents, about 43.7%, were aged 31–40 years. In terms of education, 6.3% had a high school diploma, 31% had a vocational degree, and 59.9% had a bachelor's degree. Regarding work area, the majority 67.6% were from the production area, while the remaining 32.4% worked in the office. For work experience, 44.4% had 6–10 years of experience, and 20.4% had 11–15 years. Detailed tables of these demographics can be found in Appendix C.

Safe Work Environment, Adequate Workload, Supervisor Support and Employee Productivity

This section also summarizes the descriptive statistics of the variables used in the study. The dependent variable is Employee Productivity, while the independent variables are Safe Work Environment, Adequate Workload, and Supervisor Support. All questionnaire items were analyzed, and the mean and standard deviation for each variable are reported. A detailed table of these results can be found in Appendix F.

Table 5 shows the average scores of the variables in this study. Among the independent variables, safe work environment has the highest mean ($M = 3.53$, $SD = 0.58$), which is rated very high. This means employees feel that their workplace is safe, helping them feel secure and focus better on their tasks. A safe environment supports employees' well-being and can improve their performance. Adequate workload has the lowest mean ($M = 3.13$, $SD = 0.73$), but it is still rated high. This suggests that employees generally find their workload manageable, but some may feel that tasks are not always balanced with their capacity. If not addressed, this could affect their efficiency. Supervisor support ($M = 3.33$, $SD = 0.64$) is also rated high, showing that employees feel supported by their supervisors, especially in communication, guidance, and overall assistance. Good supervisor support can boost employees' confidence and performance. For the dependent variable, employee productivity has a high mean ($M = 3.41$, $SD = 0.57$), meaning that employees see themselves as productive at work.

Overall, the results show that employees view all variables positively, with safe work environment being the strongest factor. Adequate workload is rated the lowest, which means the organization may need to pay more attention to balancing tasks. Improving workload management, along with maintaining a safe workplace and strong supervisor support, can help increase employee productivity even more.

Table 5. Mean Interpretation of the Variables Examined in the Study

VARIABLES	MEAN	STD. DEV	INTERPRETATION
Safe Work Environment	3.53	.58	Very High
Adequate Workload	3.13	.73	High
Supervisor Support	3.33	.64	High
Employee Productivity	3.41	.57	High

The descriptive statistics that employees generally perceive their workplace as safe. The highest mean is for the statement “A safe work environment helps employees stay focused and work effectively” ($M = 3.60$, $SD = 0.64$), which means most employees strongly agree with this. On the other hand, the lowest mean is for “Proper lighting, ventilation, temperature, and noise levels enhance employee productivity” ($M = 3.45$, $SD = 0.68$), although it is still rated high. This suggests that employees value safety in general, especially in helping them stay focused, but factors like lighting and noise are seen as slightly less important compared to other safety aspects.

For adequate workload, the highest mean is for the statement “A reasonable workload contributes positively to employees’ morale, health, and performance” ($M = 3.25$), while the lowest mean is for “Employees’ workloads are consistent with their work capacity” ($M = 3.05$). This shows that employees generally believe that having a reasonable workload helps them feel better and perform well at work. However, the lower score on workload consistency suggests that some employees feel their tasks are not always suited to what they can handle. Overall, the results suggest that while workload practices are good, there is still room for improvement in making sure tasks match employees’ abilities to support better productivity and well-being.

For Supervisor Support, the highest mean is for “There is adequate training and effective communication in the workplace” ($M = 3.34$), while the lowest mean is for “Supervisors provide the necessary materials, information and knowledge to aid employees in their work” ($M = 3.31$). This means employees generally feel that training and communication are good in their workplace. However, the lower score for providing materials and information shows that some employees may not always get everything they need to do their tasks well. Overall, the results suggest that supervisor support is good, but there is still room to improve in giving enough resources and information to employees.

For Employee Productivity the highest mean is for “I am always on time in starting work” ($M = 3.56$, $SD = 0.58$), and the lowest mean is for “My workplace environment motivates me to work better” ($M = 3.32$, $SD = 0.80$). This shows that employees are generally punctual and start their work on time, which is a positive sign of discipline. However, the lower score on motivation means that some employees do not feel fully encouraged by their work environment. Overall, the results suggest that employees are productive and meet their targets, but improving the work environment to make it more motivating could help increase their performance even more.

These results indicate that respondents generally have a positive perception of their work environment and their level of productivity. When compared to the study of Elaho and Odion (2022), similar patterns can be observed. Their findings, based on frequency responses, show that many respondents agreed with statements related to work environment factors such as safety, adequate workload, and supervisor support. However, direct comparison is limited because their study used frequency counts, while the present study used mean and standard deviation.

On the other hand, the employee productivity results of this study can be more directly compared with Pimpong (2023) since both used mean and standard deviation. The mean score for employee productivity in the present study ($M = 3.41$, $SD = 0.57$) is interpreted as high, which is consistent with the findings of Pimpong (2023) where employee productivity was also reported at a high level. This suggests that employees in both studies generally perceive themselves as productive in their respective work environments. However, differences in the exact mean and standard deviation values may be due to variations in respondents and work settings. While Pimpong (2023) focused on a different group of respondents, the present study was conducted in the manufacturing sector, which may involve different job demands and working conditions. Overall, despite differences in context and methodology, the findings of this study support previous research showing that a positive work environment is associated with higher employee productivity.

In summary, the study confirms and supports the previous research and highlights that good supervisor support, a safe workplace, and balanced workloads are important for improving productivity in a manufacturing setting.

3.2 Results of Regression Analysis

Effect of Safe work Environment, Adequate Workload, and Supervisor Support on Employee Productivity

The results in Table 6 show a strong connection between the three factors and employee productivity. The R-value is 0.815, and the R^2 is 0.663, which means about 66% of the differences in productivity can be explained by safe work environment, adequate workload, and supervisor support. The ANOVA test ($F = 90.675$, $p < 0.001$) shows that the model is significant, meaning the three factors together can predict employee productivity reliably.

Table 6 Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	Interpretation
	B	Std. Error	Beta				
(Constant)	.731	.178			4.117	.000	
Safe Work Environment	.232	.077	.235		3.009	.003*	significant
Adequate Workload	.162	.063	.205		2.578	.011*	significant
Supervisor Support	.406	.076	.450		5.369	.000*	significant

a. Dependent Variable: PROD

$R^2 = .663$; F -value = 90.675; p -value = .000; * Significant

Referring at the coefficients, supervisor support (SS) has the biggest effect on productivity ($\text{Beta} = 0.450$, $p < 0.001$), followed by safe work environment (SWE, $\text{Beta} = 0.235$, $p = 0.003$), and adequate workload (WL, $\text{Beta} = 0.205$, $p = 0.011$). This means that while all three factors help improve productivity, support from supervisors is the most important. The unstandardized coefficients show the practical effect of each factor. For example, if supervisor support increases by one unit, productivity increases by 0.406. If safe work environment or workload increases by one unit, productivity goes up by 0.232 and 0.162, respectively. These findings are consistent with previous research, which has shown that the work environment, workload, and supervisor support significantly influence employee productivity (Elaho & Odion, 2022)

Overall, the results show that work environment factors strongly affect employee productivity. Among these, supervisor support is the most influential. This suggests that organizations should focus on giving employees guidance, resources, and encouragement to help them perform better.

The result of the study shows that safe work environment has a significant positive effect on employee productivity ($\beta = 0.235$, $p = 0.003$). This is very similar to the findings of Elaho and Odion, who also reported a positive effect ($\beta = 0.258$, $p = 0.008$). Both studies indicate that a safe work environment contributes meaningfully to higher employee productivity, even in different organizational contexts. This will support the study of Malicay and Ganoan (2023) that suggest that organizations can enhance employee motivation and a sense of security by establishing or improving policies that promote a safe and supportive work environment. When employees perceive that their well-being is valued, they are more likely to feel confident and engaged in their work. This is also consistent with the findings of Vukmirovic et al., (2023) which showed that a safe work environment has a significant positive effect on employee productivity in the retail sector. In a manufacturing setting, supervisory experience suggests that effective safety measures that support overall health and well-being significantly reduce workplace disruptions and improve employee focus. This practical observation aligns with the current findings, reinforcing the importance of maintaining a safe working environment.

Adequate workload is a significant predictor in the present study ($\beta = 0.205$, $p = 0.011$), closely matching the effect reported by Elaho and Odion ($\beta = 0.227$, $p = 0.044$). This consistency suggests that managing workload is important across settings, supporting the mother thesis that workload affects employee productivity. This result is consistent with the findings of Herdiana and Sary (2023), who observed that employees often have routine tasks assigned by their supervisors, and when the workload is increased, it forces them to stay at work longer than intended. The significant effect of adequate

workload on productivity in this study aligns with Salsabila et al., (2024) who noted that workloads can be excessive if employees perform below standards, or too low if they exceed them, highlighting the role of workload management in productivity. In the context of the researcher's experience as a supervisor in manufacturing, employees who were assigned tasks beyond their capacity often showed decreased efficiency and morale, while a well-balanced workload that had undergone process improvement enhanced overall productivity. This real-world observation supports the statistical findings of the study.

Supervisor support is the strongest predictor in both studies. In the present study, supervisor support has $\beta = 0.450$ ($p < 0.001$), while Elaho and Odion (2022) study reported $\beta = 0.289$ ($p = 0.004$). Although the result differs, both studies highlight the critical role of supervisor support in enhancing employee productivity. The result is align with findings of Herawati et al., (2023). Which indicate that that supervisor support, where leaders guide, listen, and foster employee growth, helps reduce stress and improve overall job performance. Mehmood et al., (2024) found that supervisors who lead by example and actively perform tasks can motivate their team and improve overall work performance. In a manufacturing context, employees perform more efficiently when communication is clear, relationships are fostered through compassionate support, and feedback is delivered in a respectful and timely manner. This observation supports the study's statistical findings that supervisor support plays a crucial role in enhancing productivity.

These findings are further supported by Pimpong (2023) from whom the productivity questionnaire was adopted. Pimpong found that work environment positively affects productivity both directly and indirectly through communication, with a strong positive effect of communication and a smaller direct effect of work environment. The variation of R^2 result in Pimpong (2023) study compared to the present study may be due to differences in variables, methodology, and research context. Pimpong included a mediating variable, while the present study directly measured work environment factors in the manufacturing sector.

3.3 Conclusion

The study provided substantial evidence suggesting that safe work environment, adequate workload, and supervisor support significantly affect employee productivity, hence rejecting H_0^1 , H_0^2 , and H_0^3 . Each of these factors individually demonstrated a significant effect, with supervisor support showing the strongest influence on productivity, followed by safe work environment and adequate workload. These results are consistent with previous studies, including Elaho and Odion (2022), and Pimpong (2023) reinforcing the importance of a positive, well-managed, and supportive work environment. In essence, improving employee productivity requires organizations to ensure workplace safety, manage workloads effectively, and foster strong supervisory support. While addressing these factors significantly enhances performance, organizations should continue to monitor and support all aspects of the work environment to sustain high productivity and overall organizational success.

3.4 Recommendation

The findings of this study indicate that safe work environment, adequate workload, and supervisor support significantly influence employee productivity. In terms of workplace safety, the results show very high scores for safety measures, well-maintained equipment, and support for employee well-being. To sustain and further improve productivity, organizations should regularly review and enhance safety protocols, ensure proper lighting, ventilation, temperature, and noise control, and conduct routine inspections of equipment. Providing ongoing safety training and awareness programs will help employees feel secure and focused, allowing them to perform their tasks efficiently.

Regarding adequate workload, the results revealed a high mean score, indicating that workloads are generally manageable but could be improved. Organizations are encouraged to regularly assess employees' work capacity and adjust tasks accordingly to prevent stress and fatigue. Establishing policies that support work-life balance and ensuring that workloads are fair and reasonable will help maintain employee morale, health, and performance. Clear communication about task expectations and regular monitoring of workload distribution can also enhance productivity.

Supervisor support was also found to significantly affect productivity, with a high mean score. Supervisors play a crucial role in guiding, motivating, and providing resources to employees. To further strengthen this factor, organizations should encourage supervisors to provide clear instructions, offer regular feedback, mentor their team, and ensure that employees have access to the tools and information they need. Recognition of employees' achievements and fostering a supportive environment can boost motivation and engagement, directly enhancing productivity.

Finally, while overall employee productivity scored high, organizations can further improve outcomes by integrating initiatives that combine these three factors. For example, aligning safety protocols, workload management, and supervisor support with performance incentives or skill development programs can create a more enabling environment. By addressing these areas collectively, organizations can cultivate a motivated, engaged, and high-performing workforce, ultimately supporting both employee well-being and organizational success.

3.5 Limitation of the Study

When evaluating the findings, it is important to take into account the limitations of this study. First, only respondents from manufacturing business XYZ were included in the study, which employed purposive sampling, therefore the findings may not be entirely applicable to other companies or industries. Second, the data were collected through self-reported questionnaires, which may be affected by personal bias or inaccurate responses instead the new researcher must use other data sources such as combine surveys with observations, or company records and data pertaining to productivity. This reduces personal bias and gives more accurate results. Third, the study focused only on three work environment factors such as safe work environment, adequate workload, and supervisor support and did not include other factors that might also affect employee productivity. Despite that the three variables explain a large part of productivity, the remaining variation in productivity is not explained by these variables. There could be other factors affecting productivity that your study did not measure, such as employee motivation, incentives, organizational culture, and technology.

3.6 Declaration

This study obtained ethical approval from the Research Ethics Review Council of De La Salle Lipa. During the preparation of this manuscript, the author utilized OpenAI as a writing support tool to assist in refining certain sentences and improving clarity. All AI-generated suggestions were carefully reviewed, edited, and revised by the author to ensure coherence, accuracy, and adherence to academic standards. The author affirms that the interpretation of ideas, analysis, and majority of the content presented in this study were independently developed and written.

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Appendix A. Questionnaire

A. Survey Questionnaire Instrument

Dear Respondent:

Kindly be informed that I am working on the thesis entitled “Enhancing Employee Productivity in Manufacturing: The Role of Safe Work Environment, Adequate Workload, and Supervisor Support Questionnaires”.

Respondents must be aging from 18-65 years old and is currently working in a manufacturing company. If you qualify, may I request that you please proceed with the survey. If not, let me thank you for taking the time to view my questionnaire.

Four variables will be measured in this study:

1. **Safe Work Environment:** refers to an environment setting where ensuring the well-being of individuals is a top priority. In such an environment, any potential hazards are proactively identified and effectively managed through a combination of engineering controls, such as machine safety feature through sensors, and as well as administrative controls, including training, safety protocols, and operational procedures.
2. **Adequate Workload:** Adequate workload refers to the extent to which the tasks assigned to employees are aligned with their work capacity, are manageable, and are appropriately adjusted in response to improvements in the work environment. It also includes the organization’s support for work–life balance and the promotion of employee morale, health, and performance through the provision of a reasonable workload.
3. **Supervisor support:** refers to the guidance, support, and motivation provided by a supervisor or leader to their employees. This includes offering resources, constructive feedback, and advice. In addition to cultivating a positive work environment where employees feel valued and heard.
4. **Employee Productivity:** refers to the efficiency with which an employee completes their tasks and contributes to the overall goals of the organization. This typically measured based on the amount of work produced, the quality of the output, and how compliant it aligns with the company’s objectives within a given time frame.

Before proceeding, kindly be informed of the following:

1. You are requested to be one of the respondents and your participation is voluntary.
2. You may withdraw and discontinue answering the survey without penalty.
3. Participation involves answering a 3-page survey questionnaire which can be answered in approximately 10 to 15 minutes.
4. There will be no identification of you as an individual respondent and there will be no audio/video recording or picture taking during the survey. Your personal details will not be passed to any other person or organization.
5. The analysis of the results will be based on the average scores of all the respondents from various organizations under study. No attempt will be made to identify or assess your individual or specific organizational responses. Hence, you are not required to disclose your name while filling out the questionnaire. Please give your frank and unbiased opinion.
6. The researcher assures that your responses will be kept strictly confidential.
7. To maximize the use of the results of this study, a copy will be deposited in Learning Resource Center. Likewise, results of the study would be provided, should anyone write a request to the effect.

Proceeding to answer the following questionnaire affirms that you have read the above guidelines, and you are giving your consent to participate in the research.

Sincerely,

Michael Kenneth Armada
MBA Student

Part I: Demographic Information

1. Gender:

Male ☐ Female ☐

2. Age group you fall into?
 Under 20 ☐ 21 – 30 years ☐ 31 – 40 years ☐ 41–50 years ☐ 51–60 years ☐
3. What is your highest education?
 High School ☐ Vocational Graduate ☐ Undergraduate Degree ☐ Graduate Degree ☐

 Masters or Doctors Degree ☐
4. Work Experience?
 <1 year ☐ 1–5 years ☐ 6–10 years ☐ 11–15 years ☐ 16–20 years ☐

 More than 20 years ☐
5. Work Area?
 Office Department ☐

 Production Department ☐
Part 2: Main Questionnaire

Directions: Please use the rating scale below to indicate your level of agreement with each statement. Check the box that corresponds to your answer.

- 4 - Strongly agree
- 3 - Agree
- 2 - Disagree
- 1 - Strongly disagree

A. Adapted and Modified
Survey Questionnaire
Instrument

A. Safe Work Environment	1	2	3	4
1. There are safety measures set up by bosses/directors to guarantee security in the workplace				
2. The workplace environment is safe and supports employees' well-being.				
3. Proper lighting, ventilation, temperature, and noise levels enhance employee productivity.				
4. A safe work environment helps employees stay focused and work effectively.				
5. Adequate and well-maintained work equipment supports employee safety and performance.				
B. Adequate Workload	1	2	3	4
1. Employees' workloads are consistent with their work capacity.				
2. Workload levels are manageable and help employees remain productive.				

3. My workload has been adjusted appropriately in line with improvements in the work environment.				
4. My organization has policies to balance my work and life.				
5. A reasonable workload contributes positively to employees' morale, health, and performance.				
C. Supervisor Support	1	2	3	4
1. There is a positive relationship between supervisors and employees in the work environment.				
2. Employees have adequate supervision and support to aid employees in the work environment.				
3. There is adequate training and effective communication in the workplace.				
4. My supervisor ensures employees 'clear understanding of assigned tasks and motivates employees to improve productivity.				
5. Supervisors provide the necessary materials, information and knowledge to aid employees in their work.				
D. Employee Productivity	1	2	3	4
1. I always finish work according to the required target number				
2. I always finish my work according to expected standards				
3. I am always on time in starting work				
4. I am aided by my workplace environment to finish my duties and roles on time				
5. I am not restricted in my performance by my workplace environment				
6. I am ready to put in extra efforts to get my schedules completed because of the enabling environment				
7. My workplace environment motivates me to work better				

Source: Elaho, O. B., & Odion, A. S. (2022). The impact of work environment on employee productivity: A case study of business centers in University of Benin Complex. *Amity Journal of Management Research*, 5(1), 782-797.

Pimpong, M. (2023). Work environmental factors and its impact on employee productivity: The mediating role of employee commitment. *E-Journal of Humanities Arts and Social Sciences*, 4(8), 916-935.

Appendix B. Signed Research Ethics Review Clearance Form

DE LA SALLE LIPA

Office of the Vice Chancellor for Research, Innovation & Internationalization

Research Management and Coordination Office

RESEARCH ETHICS CLEARANCE FORM For Thesis Proposals
Names of Student Researcher(s): Michael Kenneth L. Armada
Research Project Title: “Enhancing Manufacturing Employee Productivity: The Role of Safe Work Environment, Workload, and Supervisor Support”
College: CBEAM
Department: Graduate Program
Course: Master in Business Administration
Expected Duration of the Project: from: February 16 2026 to: March 16 2026
Ethical considerations: The research study will adhere to the ethical guidelines established by the Institution, ensuring that participants are fully informed of their rights and the voluntary nature of their participation. All participants from Company XYZ will provide informed consent prior to their involvement, and their privacy will be prioritized with careful handling of their data. Additionally, the researcher will seek review and clearance of the study from the Research Ethics Clearance Committee of the Institution. Participants will also have the option to withdraw at any time, ensuring their voluntary participation. Throughout the study, impartiality will be maintained in all interactions, and communication will be clear, honest, and transparent. The online survey will be conducted in accordance with the Office of Research and Publication's Ethical Guidelines for Online Survey Design.
To the best of my knowledge, the ethical issues listed above have been addressed in the research.  <u>Dr. Erickson MarUnez</u> Name and Signature of Adviser Date: January 31, 2026

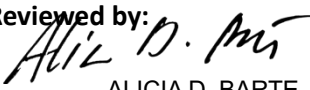
Noted by:

Dr. Sheila Maloles

Name and Signature of the Teacher in Charge

Date:

Reviewed by:



ALICIA D. BARTE, RN, RM, MAN, EdD

Research Ethics Review Representative

Date:

Recommendation:

- () Full Review (for endorsement to RMCO)
- (✓) Expedited Review (for RER Council Rep review)
- () Exempted from Ethics Review

Noted by:

**Name and Signature of the
Department Chairperson**

Date:


Dr. Jasmin De Silva

Name and Signature of the Dean

Date:

Title of the Project: Work Environment Improvement Action Plan to Enhance Employee Productivity		
Goals/Objectives: • To maintain and enhance a safe and supportive workplace environment. • To optimize employee workload for balanced and productive performance. • To strengthen supervisor support through guidance, mentoring, and communication. • To align work environment improvements with organizational productivity goals. • To promote employee well-being, engagement, and overall performance.		
Time Frame: June 2026 – December 2026	Unit/Institution Responsible for the project: Human Resources Department (HRD) Learning and Development (L&D) Team Training Department Industrial Engineering Department Operations and Maintenance Department Managers and Supervisors	Stakeholder: Employees, Supervisors, Managers, HRD, L&D, Project Team
Project Team: HRD, L&D Team, Operations Managers, Supervisors, Department Heads		

ACTION PLAN:

Activities	In-Charge	Timeline	Resources	Potential Risks	Communications Plan
Review and update 100% of workplace safety protocols and conduct at least 2 safety training sessions for all employees. ensuring 100% employee attendance and achieving a post-training evaluation score of at least 85%.	EHS, Managers and Supervisors	June 2026– July 2026	Existing safety manuals, safety training budget, inspection tools	Employees may neglect following new protocols	Regular briefings, safety newsletters, team meetings.

Conduct monthly inspections (2 cycles) of work equipment, lighting, ventilation, temperature, and noise levels. Resolve at least 90% of identified issues within 2 weeks.	Operations and Maintenance Team	June 2026– July 2026	Maintenance tools, inspection checklists	Delays in equipment updates	Monthly progress reports to HR and department heads.
Perform workload assessments for all departments using time study tools. Reduce reported workload imbalance by at least 20% based on employee feedback surveys.	Managers, Supervisors and Industrial Engineers	July 2026 – Aug 2026	Process flow Time Study workload assessment tools	Employees or managers may resist changes	One-on-one meetings, quarterly workload review sessions.
Introduce flexible scheduling policies with at least 70% employee participation by the end of the year. Improve work-life balance survey ratings to a mean of ≥ 3.6 .	HRD and Department Heads	July 2026 – December 2026	HR policies, scheduling software (ERP)	Resistance from management due to operational needs	Employee memos, policy briefings, feedback channels.
Conduct at least 2 training and mentoring sessions for supervisors. Achieving 100% supervisor participation and improving supervisor support ratings to	Training Dept. and Managers	August 2026 – Sept 2026	Training modules, mentoring resources	Supervisors may resist additional responsibilities	Coaching sessions, quarterly performance feedback.

≥ 3.6					
Ensure all supervisors conduct weekly team meetings and provide clear task guidelines. Achieving at least 90% employee participation and improving communication effectiveness ratings to a mean of ≥ 3.6 .	Supervisors and Team Leaders	August 2026 – Sept 2026	Communication platforms, task guides	Employees may not fully engage	Weekly team meetings, email updates, feedback surveys.
Conduct a post-implementation evaluation using employee surveys and productivity data. targeting an overall employee productivity mean score of ≥ 3.6 and at least 10% improvement in performance indicators	HRD, L&D, Managers and Supervisors	December 2026	Productivity data, employee survey results	Delays in data collection	Review meetings, summary reports shared with management.

Evidence of Success (Benchmarks for Progress)

Safe Work Environment:

Achieve mean score of ≥ 3.6 in safety-related survey items

Reduce workplace incidents/accidents by at least 15%

Resolve 90% of safety issues within identified timelines

Adequate Workload:

Achieve mean score of ≥ 3.6 in workload balance

Reduce overtime hours by at least 15–20%

Decrease employee complaints related to workload by 20%

Supervisor Support:

Achieve mean score of ≥ 3.6 in supervisor support

Ensure 100% supervisor participation in training programs

Increase mentoring engagement rate by at least 70% of employees

Overall Employee Productivity:

Achieve mean score of ≥ 3.6 in productivity indicators

Improve task completion rate by at least 10–15%

Increase employee engagement scores by 10%

Appendix D. Demographic Profile of Respondents*Demographic Characteristics of Respondents*

Socio-demographic Factors		Frequencies	Percentage
Gender	Male	82	57.7%
	Female	60	42.3%
Age	20 and below	3	2.1%
	21 to 30 years old	60	42.3%
	31 to 40 years old	62	43.7%
	41 to 50 years old	17	12%
	51 to 60 years old	0	0%
Educational Attainment	High school	9	6.3%
	Vocational Course	44	31%
	Bachelor's Degree	85	59.9%
	Masters or Doctorate Degree	4	2.8%
Work Experience	<1 year		
	1 to 5 years	6	4.2%
	6 to 10 years	27	19.0%
	11 to 15 years	63	44.4%
	16 to 20 years	29	20.4%
	More than 20 years	13	9.2%
		4	2.8%
Work Area	Office Area	46	32.4%
	Production Area	96	67.6%
	Others	0	0%

Appendix E. Informed Consent Form

Enhancing Manufacturing Employee Productivity: The Role of Safe Work Environment, Adequate Workload, and Supervisor Support

Informed Consent Form

To: Manufacturing Employees

Michael Kenneth L. Armada

College of Business, Economics, Accountancy, and Management / De La Salle Lipa

Enhancing Manufacturing Employee Productivity: The Role of Safe Work Environment, Adequate Workload, and Supervisor Support

You are being invited to take part in a research study. Before you decide to participate in this study, it is important that you understand why the research is being done and what your participation will involve. Please read the following information carefully and feel free to ask the researcher if there is anything that is not clear or if you need more information.

PURPOSE OF THE STUDY

The purpose of this study is to understand how the work environment affects employee productivity in manufacturing company XYZ. In simple terms, the study looks at workplace conditions that help employees work better and those that make work more difficult. This research is based on factors used in the study of Elaho and Odion (2022) but is applied to a local manufacturing company. The goal of the study is to help the company improve its work processes and operate more effectively and efficiently.

You were chosen to participate in this study because you are directly involved in the daily operations of the company. Your experiences at work give valuable information about actual working conditions. The study does not aim to judge or evaluate individual performance. Instead, it focuses on understanding common workplace factors that affect productivity. Some participants may feel unsure about joining, but all responses will be used only for research purposes. Your honest participation will help produce reliable results that may lead to a better and more supportive work environment.

STUDY PROCEDURES

If you choose to participate in this research study, you will first be given a brief explanation of the purpose of the study and what your participation involves. You will be asked to read and sign a consent form to confirm that you voluntarily agree to take part in the study. After giving your consent, you will be requested to answer a survey questionnaire about your work environment and productivity. The questionnaire may be completed using a paper-and-pen form, or by online Google Form depending on your preference and convenience

The survey will take approximately 10–15 minutes to complete. The questions will ask about your general working conditions, such as workplace safety, adequate workload, supervision, and how these factors affect your ability to perform your job. All questions are focused on your experiences and perceptions at work and do not ask for confidential company information or personal identification. You are free to skip any question that makes you feel uncomfortable.

Some questions may ask about your general work experiences, including areas that could be challenging, but you may answer only what you are comfortable with. However, there are no questions intended to embarrass, pressure, or harm you in any way. This study does not involve any physical experiments or activities, and no unusual bodily sensations will be experienced. Once you have completed the questionnaire, your participation in the study will be finished, and your responses will be kept confidential and used only for research purposes.

DURATION

Participation in this study involves answering a short, three-page survey questionnaire, which will take about 10 to 15 minutes to complete. The study does not include interviews, focus group discussions, or experiments. No follow-up activities will be required after completing the survey. Your participation will be finished once you have submitted your responses.

VOLUNTARY PARTICIPATION

Your participation in this study is completely voluntary. You can choose whether or not to take part. You may also stop participating at any time without giving a reason. Choosing not to join or leaving the study will not affect the services or benefits you normally receive. There will be no penalties or negative consequences if you decide not to participate. If you take part in an individual interview, you have the right to review your responses afterward. You can also request that any part or all of your interview notes or recordings be deleted. Your privacy and choices will always be respected throughout the study.

RISKS

This study involves minimal risks, as participation only requires answering survey questions about your work environment, adequate workload, and supervisor support. Some questions may ask about challenges or difficulties in these areas, which could cause slight discomfort or make you reflect on sensitive topics. To minimize any potential discomfort, you may skip any question you do not wish to answer. You are free to stop participating at any time without giving a reason. Choosing not to answer certain questions or withdrawing from the study will not affect your employment, access to services, or any benefits. All responses will be kept confidential and handled securely to protect your privacy. The research team will take care to ensure that your participation is as comfortable and safe as possible. Your wellbeing is our priority, and your choices will always be respected.

BENEFITS

There will be no direct material benefit, such as gifts, payment, or reimbursement, from participating in this study. However, your participation will help provide valuable

information about workplace factors such as work environment, employee workload, and supervisor support. We hope that the information gathered from this study may help the company improve working conditions and support employees better. This could lead to a more efficient, safer, and positive workplace, which may benefit you and your colleagues indirectly. In addition, the findings may contribute to the wider community and society by offering insights into improving productivity and employee well-being in similar workplaces. By sharing your experiences, you are helping create knowledge that could guide future workplace policies and practices. Although you may not receive an immediate personal benefit, your contribution is important for the improvement of the workplace and the overall understanding of employee productivity. Your participation will help ensure that the study's findings are accurate and meaningful.

CONFIDENTIALITY

The research team will take several measures to ensure that all information you provide is kept confidential. First, all data collection will follow the Data Privacy Act of 2012 (RA 10173) of the Philippines. Any information that is confidential, private, or sensitive will be excluded from this study. Each participant will be assigned a code or pseudonym, which will be used in all research notes, documents, and reports instead of your real name. Any notes, interview transcripts, or documents containing personal identifiers will be stored securely and can only be accessed by the researcher.

If the study involves focus group discussions, participants will be asked to respect each other's privacy and not share what is discussed outside the group. However, the research team cannot guarantee full confidentiality in a group setting, as information shared may become known to other participants. For highly sensitive topics or vulnerable participants, extra precautions will be taken, such as minimizing the collection of identifiable information and ensuring that recordings or notes are securely stored and accessible only to the research team. These measures are intended to protect your privacy and maintain the confidentiality of your responses throughout the study.

CONTACT INFORMATION

This study was approved by the Research Ethics Review Council of DE LA SALLE LIPA. If you have any questions at any time about this study, or if you experience any non-normative sensations as a result of participation, you may contact the researcher whose contact information is on the first page. If you have any questions regarding your rights or treatment as a research participant, or if problems arise during your participation that you do not feel you can discuss with the Principal Investigator, please feel free to send an email to **rmcorer@dls.edu.ph**.

CONSENT

(This section is mandatory)

I have read the provided information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I understand that I will be given a copy of this form, and the researcher will keep another copy on file. I consent voluntarily to be a participant in this study.

Print Name of Participant _____

Signature of Participant _____

Date _____

Day/month/year

(This section is mandatory)

Print Name of Researcher _____

Signature of Researcher _____

Date _____

Day/month/year

(This section is optional)

Print Name of Impartial Witness _____

Signature of Impartial Witness _____

Date _____

Day/month/year

(If the participant is illiterate ¹)

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Print name of witness _____

Signature of witness _____

Date

Day/month/year

¹ A literate witness must sign (if possible, this person should be selected by the participant and should have no connection to the research team).

Appendix F. Summary of Items from the Survey

Safe Work Environment

Items	Mean	Std. Deviation	Interpretation
1. There are safety measures set up by superiors to guarantee security in the workplace	3.54	.63	Very High
2. The workplace environment is safe and supports employees' well-being.	3.52	.67	Very High
3. Proper lighting, ventilation, temperature, and noise levels enhance employee productivity.	3.45	.68	High
4. A safe work environment helps employees stay focused and work effectively.	3.60	.64	Very High
5. Adequate and well-maintained work equipment supports employee safety and performance.	3.53	.68	Very High
Safe Work Environment	3.53	.58	Very High

Source: Adapted and modified questionnaire from Elaho and Odion (2022)

Adequate Workload

Items	Mean	Std. Deviation	Interpretation
1. Employees' workloads are consistent with their work capacity.	3.05	.78	High
2. Workload levels are manageable and help employees remain productive.	3.07	.81	High
3. My workload has been adjusted appropriately in line with improvements in the work environment.	3.20	.81	High
4. My organization has policies to balance my work and life.	3.06	.89	High
5. A reasonable workload contributes positively to employees' morale, health, and performance.	3.25	.79	High
Adequate Workload	3.13	.73	High

Source: Adapted and modified questionnaire from Elaho and Odion (2022)

Supervisor Support

Items	Mean	Std. Deviation	Interpretation
1. There is a positive relationship between supervisors and employees in the work environment.	3.33	.68	High
2. Employees have adequate supervision and support to aid employees in the work environment.	3.33	.65	High
3. There is adequate training and effective communication in the workplace.	3.34	.70	High
4. My supervisor ensures employees 'clear understanding of assigned tasks and motivates employees to improve productivity.	3.32	.75	High
5. Supervisors provide the necessary materials, information and knowledge to aid employees in their work.	3.31	.74	High
Supervisor Support	3.33	.64	High

Source: Adapted and modified questionnaire from Elaho and Odion (2022)

Employee Productivity

Items	Mean	Std. Deviation	Interpretation
1. I always finish work according to the required target number	3.35	.72	High
2. I always finish my work according to expected standards	3.43	.68	High
3. I am always on time in starting work	3.56	.58	Very High
4. I am aided by my workplace environment to finish my duties and roles on time	3.37	.70	High
5. I am not restricted in my performance by my workplace environment	3.42	.67	High
6. I am ready to put in extra efforts to get my schedules completed because of the enabling environment	3.40	.74	High
7. My workplace environment motivates me to work better	3.32	.80	High
Employee Productivity	3.41	.57	High

Source: Adapted questionnaire from Pimpong, M. (2023)

Appendix G. Multiple Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.815 ^a	.663	.656	.33672

a. Predictors: (Constant), SS, SWE, WL

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	30.842	3	10.281	90.675	.000 ^b
Residual	15.646	138	.113		
Total	46.488	141			

a. Dependent Variable: PROD

b. Predictors: (Constant), SS, SWE, WL

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.731	.178		4.117	.000
SWE	.232	.077	.235	3.009	.003
WL	.162	.063	.205	2.578	.011
SS	.406	.076	.450	5.369	.000

a. Dependent Variable: PROD

Appendix H. Community Needs Assessment

Name	Michael Kenneth L. Armada	Batch/Section	MBA Sec 2402
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NEEDS ASSESSMENT

A needs assessment is a systematic process used to identify and evaluate the current conditions, problems, or challenges within an organization, community, or any other context. The goal of a needs assessment is to determine what specific needs exist so that appropriate strategies, interventions, or solutions can be developed to address those needs effectively. This will make up most of the context of your Introduction.

Organization/Industry

Needs assessment is a process to gain valuable insights into a company's actions or processes to determine efficiency or current situations, events or happenings affecting organizations under an industry. This assessment can be part of a company's planning process to determine gaps or needs and how to address areas for improvement.

Please identify Organization or Industry

Company XYZ

Community/Sector

Needs assessment is a process to gain valuable insights to understand the specific needs, challenges, and opportunities within a community or sector.

Please identify Community or Sector

- A community is a group of individuals who live in proximity to each other and share common interests, values, and goals
- Sector is a specific part of society or the economy and made up of similar elements

Goal of Needs Assessment

The main outcomes of a community needs assessment are in 3 main categories: Policy Change, Systems Change, and Environmental Change. Identify which of these main categories do you wish to accomplish. Tick what is appropriate

Policy Change. This involves laws and regulations designed to guide or influence behavior. These can be both legislative or organizational. Policy changes can include raising the age limit to buy cigarettes.

- ☒ **Systems Change.** This involves a change that affects all aspects of the community. This includes the social norms of an organization, institution, or system, and often goes hand in hand with policy change. These changes can include prohibiting smoking in public places.

Environmental Change. This involves physical, social, or economic factors that influence people's practices and behaviors. Physical includes structural changes, like building specific smoking-only structures. Social factors include changes in attitude and behavior, like a need for more no-smoking areas. Lastly, economic factors include financial disincentives or incentives to encourage a desired behavior like raising the price of cigarettes.

SDG Addressed

- GOAL 1: No Poverty
GOAL 2: Zero Hunger
☒ Goal 3: Good Health and Well-being
GOAL 4: Quality Education
GOAL 5: Gender Equality
GOAL 6: Clean Water and Sanitation

- GOAL 7: Affordable and Clean Energy
☒ GOAL 8: Decent Work and Economic Growth
☒ GOAL 9: Industry, Innovation and Infrastructure
GOAL 10: Reduced Inequality
GOAL 11: Sustainable Cities and Communities
GOAL 12: Responsible Consumption and Production

- GOAL 13: Climate Action
GOAL 14: Life Below Water
GOAL 15: Life on Land
GOAL 16: Peace and Justice Strong Institutions
GOAL 17: Partnerships to achieve the Goal

SITUATION/OBSERVATION

- Define the organization/industry or community or sector to assess, its profile or the general description of the general context in which the problem is to be viewed and discussed or situations in and the process by which problem arose and developed as well as reasons for choosing the topic
- Provide the trends and facts (statistics) of the phenomenon and offer possible explanations of the trends.
- Provide an overview of what your own research is about in terms of your general assumptions and in terms of where the data will be coming from

The study will focus on one of the departments of the manufacturing company XYZ. It is one of the top products manufacturers in the world. Its name was included on the list of Forbes top companies for the year 2024. Being one of the leading suppliers of different products, one of its opportunities is to deliver the product on time. The products offered by the company require high skill and expertise to produce due to quality requirements for the product – high quality and safe products for a transportation-related product. To combine the two requirements of customers, it is equal to deliver high quality complex products on time.

Below is the Productivity report released by the finance department of the company XYZ. There are 6 major processes in the company XYZ. Productivity report is computed by earned hours (output) divided by the total labor hours (input). Productivity generally refers to the efficiency of production, typically measured as the ratio of output to input (Brynjolfsson & McAfee, 2014) Manufacturing utilization refers to how efficiently a manufacturing system uses its available capacity. Process 1 and 2 are automated processes while processes 3 to 6 are manual labor-intensive processes. October 2024 will not be included in the analysis due to system replacement occurring this month that caused a stoppage of the line in a span of almost 2 weeks.

	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec
Productivity	70%	70%	85%	50%	70%	75%	80%	80%	75%	75%	40%	60%	
Process 1 - Machine	55%	90%	205%	60%	140%	220%	175%	160%	80%	155%	50%	105%	
Process 2 - Machine	70%	130%	120%	80%	35%	0%	120%	125%	95%	110%	10%	15%	
Process 3 - Assembly	65%	75%	95%	45%	75%	70%	80%	80%	90%	65%	60%	70%	
Process 4 - Assembly	70%	60%	65%	40%	60%	65%	70%	70%	60%	70%	50%	50%	
Process 5 - Assembly	80%	60%	55%	45%	55%	70%	60%	65%	65%	55%	25%	50%	
Process 6 - Assembly	50%	45%	60%	55%	55%	50%	45%	60%	80%	50%	50%	60%	

Based on data gathered from Company XYZ covering the entire year of 2024 and the last month of 2023, the researcher discovered that the productivity trend at Company XYZ was irregular. In particular, the majority of the months within the assembly process (P3 to P6) failed to meet the company's productivity target of 70%. This indicates that the productivity at Company XYZ requires immediate attention and further studies.

- From your observation of preliminary research, what do you think is the problem?
 - What do you think causes the problem in the organization/industry or the community or sector?
 - What will be necessary to solve the problem (solution)?
 - What should be the primary objective of your study and what should be the goal of the identified solution
- Support your answer to this questions with findings from reviewing theories and studies.

As I observed, one of the root causes of the problem lies in an unproductive workforce, meaning that the capabilities and potential of employees, in relation to the working hours assigned to them are not being used efficiently or effectively leading to a noticeable underuse of their skills and time, which in turn contributes to the overall inefficiency in the organization's operations or low productivity of the employees. During my preliminary research, there are several factors affecting an employee's productivity in manufacturing sector, these are safe work environment, adequate workload, and supervisor support (Elaho & Odion, 2022). To be able to solve the problem of employee productivity of company XYZ, the researcher needs to define and analyze the different root causes of the three identified determinants of employee productivity. The productivity of employees is essential for the success and growth of the manufacturing industry. As global competition grows and technological advancements rapidly transform sectors, manufacturing firms must seek ways to improve the efficiency and effectiveness of their workforce to remain competitive. In the Philippines, the manufacturing sector is crucial to the economy, significantly contributing to job creation and economic development. However, despite its significance, many manufacturing businesses still encounter obstacles related to low employee productivity, which also the chosen researcher company XYZ experiencing low productivity of employee. The study aims to determine the effect of the factors used in the study by Elaho and Odion (2022) on employee productivity in the manufacturing company XYZ, with the goal of helping the company operate effectively and efficiently, ultimately leading to increased profitability. The study will make a significant contribution to the existing body of literature within the academic field by providing new observations, addressing gaps in current research, and offering a deeper understanding of the topic regarding the determinants of productivity in manufacturing sector, subsequently enhancing scholarly discourse and supporting future research and developments in the area of study that will serve as basis of future researchers. Understanding these factors is crucial for developing strategies to promote well-being, decent work, and economic growth in the manufacturing industry in the Philippines, through significant improvements in labor productivity, in order to support the Global Goals or Sustainable Development Goals (SDGs).

References

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Prepared:

Michael Kenneth Armada

 Name and signature of Student

