

## **Employee Skills on Performance of Manufacturing Industries in Kenya: A Case of Bidco Africa**

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### **ABSTRACT**

The Kenyan government has identified manufacturing as a key pillar for economic growth, aiming to achieve sustainable consumption, increased production patterns, and industrialization as outlined in the Sustainable Development Goals (SDGs). By focusing on this sector, Kenya aims to achieve its vision of industrialization by 2030, creating job opportunities and reducing poverty rates. Manufacturing is one of the Big Four Agendas for the government to improve the nation economically. Employee skills are crucial for achieving competitive advantage and producing quality products, as outlined in SDG 9. However, many manufacturing industries in Kenya lack these skills, affecting their performance. This study aimed to assess the influence of employee skills on the performance of Bidco Africa manufacturing industries in Kenya, using a descriptive research design and a quantitative research approach. The study included 171 employees from five departments in Thika, selected through stratified sampling and simple random sampling. The findings suggest that employee skills significantly influence the performance of the manufacturing industry. These findings will help stakeholders in the industry formulate and implement strategies to boost business performance. The study recommends regular skill updates to make employees adaptable and flexible in this dynamic environment.

**Keywords:** Employee, Skills, Performance, Manufacturing and Industry

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### **INTRODUCTION**

Manufacturing is considered an engine of economic growth of a nation. It necessitates innovation and creativity whose outcome is increased industrialization and employment creation, as stressed in international goals of development [1]. These positive contributions notwithstanding, manufacturing industries continue to encounter hurdles in their operations. In Germany, skilled workers have been pivotal in the manufacturing industries. Their participation has significantly contributed to the promotion of industrialization in this nation. The country is renowned because of the vibrant manufacturing and prowess in engineering. Germany puts a lot of focus

on vocational education and apprenticeship which lead to well skilled and trained workers enriched with technical and practical knowledge. This has enabled manufacturing companies to be innovative in developing new products as well as improving the current ones. Technology has therefore improved the manufacturing sector in this nation. The influence of skilled employees in the manufacturing sector is undeniable. Germany's commitment to technical education and training coupled with a culture of excellence have resulted to skillful employees who have driven the country towards competitive advantage, innovativeness, quality production in the manufacturing industries [2, 3]. Despite

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all these, manufacturing industries in Germany face skills gap in which employee skills occasionally fail to align with rapid changes in new technology hence necessitating the need to update their skills regularly to avoid obsolesce. The advent of covid-19 has led to talent shortage in this industry. This has created shortage of skilled workforce and high labor costs in the country [4, 5]. In Japan, the contributions of skilled workers can not be underestimated. The country is reputable for the best quality goods and services it produces. This has been attributed to advanced technology and lean manufacturing. Credit is given to its skillful labor force that ensure products produced in the industries meet quality standards. The skilled workers focus on continuous improvements to sustain quality production [6]. They identify deficiencies, inefficiencies and suggestively initiate and correct aspects that require improvements. More importantly the skilled workers are the drivers of innovation in manufacturing sector. They are adaptive to new processes and thus put their organizations on a competitive edge globally [7]. On job training, mentoring, coaching among other trainings, have been intensively used to instill continues productive skills in workers. Organizational and management training and development schemes of workers have enhanced the level of skills among the workers [8, 9]. However, these technological changes pose problems to workers who must continuously upgrade their skills to remain relevant in the market. Labor shortages are experienced in the country hence affecting manufacturing industries among others. The recruitment of skilled labor force is a problem facing the Japanese manufacturing companies [10, 11, 12].

In South Africa, skilled labor force has a significant impact on the performance of manufacturing sector and general implications on the nation's competitive advantage and economic growth. This has been utilized further in the operationalization of modern machines,

Bahizi and Ongesa adaptation to changes in production procedures and implementation of new technology. Skilled workers have been responsible in the production of quality goods and services that meet standards. This has not only led to customer satisfaction but improved the public image of the manufacturing companies. These employees have enabled the nation to remain competitive globally because of their ability to produce quality products that meet international requirements. The education system has contributed greatly in producing qualified manpower. On the other hand, the government of south Africa, fully supports development through technical training and continued learning. Reskilling and upskilling have been instituted by companies on the workers. These coupled with experiential training on employees have led to improved performance of the manufacturing industries [13, 14]. In spite of all these, manufacturing industries in south Africa are deficient of skilled labor since the industry is dominated by significant number of unskilled and semi-skilled workforce [15]. Kenya has many manufacturing industries diversified in many sectors. Compared to the countries in East Africa, she dominates in terms of the numbers and sophistication of manufacturing industries. Despite this growth rate, other countries in the region are growing their manufacturing much faster. Studies indicate that the sector is growing much slower than those in Ethiopia, Rwanda, Tanzania, and Uganda. It is predicted that if the status quo continues, then other countries in this region will dominate the manufacturing industry. Unlike other developing nations, Kenya has not been able to manage a vibrant manufacturing industry. Manufacturing has only been confined on agriculture consequently leading to reduced GDP by this sector [16, 17, 18]. Most workers don't have the technological skills that would make them competitive in the market [19, 20]. In the recent past, manufacturing industries have reduced their contribution to the economy in Kenya while others have completely collapsed, despite the important role they

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play in the economy in job creation, industrialization and economic diversification. The dead once huge parastals especially in the sugar industry has elicited bitter debate among the

### Statement of the Problem

Manufacturing is one of the economic factors that significantly has an active role in the achievement of the SDGs as stipulated by the United Nations. If properly adopted, manufacturing would address most of the SDGs including alleviation of poverty and mitigation of climate change through reduction of emissions. Consequently, this will lead to a safe environment, and prosperity for all. Adoption of sustainable practices by manufacturing industry will eventually lead to optimization use of resources, minimization of negative effects on the environment hence leading a prosperous world by 2030. In Kenya, manufacturing industries are vital in meeting the national goals of development. These industries are a major source of employment, technological growth, and general economic growth. As a result, it is enshrined in the country's vision 2030 whose role is transforming Kenya into a globally competitive, middle-income

### Research Objective

This study's objective was to evaluate the effect of employee skills on the performance of Bidco Africa manufacturing industry in Kenya This

### Underpinning Theory

The study was based on Resource Based Theory. This theory was founded by Wernerfelt in 1984. It suggests the importance of examining an organization's resources to attest its competitiveness in the market. The proponents of resource-based theory strongly argue that for an organization to perform well than its competitors, it needs abundance of resources. [25] observed that firms are compared on the basis of the resources they have because they determine their competitive

### Employee Skills on Performance of Manufacturing Industries

[27] conducted research purposively to provide an evaluation of the correlation existing between effective training needs, effective training techniques and effective

Bahizi and Ongesa Kenyans, [21, 22, 23, 24]. It is against this background that this study attempts to evaluate employee skills on performance of manufacturing companies in Kenya by focusing on Bidco Africa.

economy through industrialization. Despite these positive contributions, manufacturing face challenges globally [10, 22]. Kenyan manufacturing industries face hurdles in their daily operations. This is against the crucial roles they play in generating revenue and creating job opportunities to many people. Some of these industries have been overwhelmed by the terrible conditions that have eventually seen them close up their operations. Others like Bidco Africa, have continued to remain firm despite regulatory and bureaucratic conditions, tough competitive market and regular currency fluctuations and skill gaps they face. If this situation continues, more business opportunities will be lost leading to reduced revenue generation and job cuts among other economic effects. The purpose of this research therefore is to assess the relationship between employee skills and performance of Bidco manufacturing industry in Kenya.

study was based on alternative hypothesis:  $H_1$ : There is a significant relationship between employee skills and performance of Bidco Africa in Kenya

advantage. [26], identified three groups of resources: tangible, intangible and personnel. Intangible resources are the skills, competency, technology and knowledge that employees possess. They have a significant relationship with performance of the firm. Based on this theory, the study will assess the influence of employee skills on performance of Bidco Africa. Skills are essential segments of organizational intangible resources and when used efficiently can spur performance.

training content on workforce productivity in electrical training at Penang, Malaysia. The target population was 6322 constituting manufacturing 28

industries from which a sample size of 222 was selected for this study. Primary data was collected using questionnaires based on research objectives. Due to heterogeneity of the population, stratified sampling was used for identifying respondents. The results of this study established a significant relationship between effective training need analysis, effective training techniques and effective training contents and employees' productivity. The study was limited to only electrical manufacturing industries, hence recommending further studies on other aspects of the sector.

[28] carried a study to find out on the job training, off the job training, coaching and job rotation influence performance of manufacturing industries. The research utilized a descriptive research design. The study population was 185 respondents drawn from the top management, supervisors and operational staffs. A sample size of 185 was chosen composed of constituting 8 top Management Staff, 13 Supervisors Staff and 35 Operational Staff. Primary data was collected by use of questionnaires and analyzed with the aid of SPSS. The analyzed results were presented using suitable tables and figures. The results of this study established that all the independent variables affected employee performance in the manufacturing industry. The study recommended investment in various forms of job training by manufacturing companies.

[29] conducted a study to find out the influence of training and development programs on employees' performance. The study was informed by the fact that qualified laborers who have adequate expertise are the foundation of an organization's success. Firms meet their performance targets when workers possess correct skills and capabilities that they use to accomplish the tasks they are allocated. It is therefore through training that workers are able to obtain desirable knowledge and skills. This study established a significant relationship between training and development and employees' performance.

[30] conducted research whose objective was to find out the impact of training and development on satisfaction levels of employees in the manufacturing sector. The study was informed on the significant role trained workers to meet organizational tasks effectively. The study specific objective was to analyze the effect of quality of work life on employees' happiness. The study used a sample of 154 workers from manufacturing sector who were collected and put under a study with objectivity. The study found out that work life balance plays a key role to the workers' performance and on their wellbeing. The study further a ledge that trained employees boost the ability of an organization to meet its goals and objectives.

[31] carried out research to find out the effect of training participation on employee performance in manufacturing in sub-Saharan Africa. The study employed a cross sectional survey of a multinational manufacturing company in Ghana. Asymmetrical hypothesis testing was done using structural equation modelling and regression analysis. The results showed that training participation was positively related to employee turnover in the manufacturing industry. The study's results further show the influence of valence and motivation to training needs and outcome. The research recommends manufacturing industries to be aware of different motivation and expectations of training participation of the employees.

[32] conducted a study to find out the effect of employee training on the performance of small manufacturing industries in the tablet water sub sector. The scope covered two table water factories at Uromi in Edo state, Nigeria. A survey research design was adopted while data was collected from using questionnaire. Pearson product moment correlation coefficient and one-sample Kolmogorov-Smirnov test was used to analyzed data. SPSS version 25 was used in aiding the analysis. The findings showed that unsystematic approach to employee training affected firm's

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performance highly; training design, training delivery style both affected employee performance. The study also established a strong significant relationship between the perception of employees to training and the performance of the firm. Finally, the study found out that the rate in which employee training affected performance was high. The study recommended good strategies to be put in place to assess and evaluate employee performance after every training. This would ensure the right employees are trained by the organization.

[33] conducted a study purposely to establish the influence of training and development on the performance of analysis consultant employees on environmental impacts. The target

Bahizi and Ongesa population constituted the total number of workers who have followed the training and development. The selection was done through purpose sampling. The total was 35 people. Data collection was done by use of observation, questionnaire and literature review. Simple regression was used to analyze data and examine hypothesis. The findings established that training and development affect workers' performance. From this empirical review, it is evident that various studies have been conducted to establish the relationship between employee skills and performance of manufacturing companies. However, there is no recent study that has been done on Bidco Africa. This is the contextual gap that this study intends to fill.

## RESEARCH METHODOLOGY

### Research Design

A research design is the structure that a researcher uses in integrating the diverse study components in a rational and coherent manner in order to address the study questions [34]. This study employed a descriptive research design to evaluate the effect of employee's skills on the performance of Bidco Africa manufacturing industry, Kenya. This design was specifically chosen because it would yield valuable data that could be useful to enrich the study. This design further helped the researcher to get a view of the phenomena as they existed by accurately portraying the true characteristics of the situation. Using this

design therefore the researcher attempted to seek answers to research questions by assessing how employee skills influenced performance of manufacturing companies. This research was done at Bidco Africa headquarters in Thika, Kiambu County. Bidco Africa was purposely selected because it is one of the largest manufacturing industries in Kenya with many sustained operations in many markets over the years. The targeted population constituted 171 employees at the headquarters drawn from the departments of production, investment, technical, marketing and human resource as shown in Table 1.

**Table 1: Target Population**

Department	Number of workers
Production	47
Sales	36
Technical	31
Marketing & HR	57
<b>Total</b>	<b>171</b>

**Source: Bidco Africa (2022)**

A sample size of 120 was used consisting of employees from the production, investment, technical, marketing and human resource departments. The sample size was computed

using Yamane (1967) sampling frame formula from the target population of 171 employees as follows:

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

Where:

n: Sample

N: Population

e<sup>2</sup>: Margin Error (0.05)<sup>2</sup>

n= 120

Stratified sampling was used to choose respondents proportionally. Individual respondents were chosen by use of simple random sampling, which was done using random numbers generated by a computer program as shown in Table 2

**Table 2: Sample Size**

<b>Department</b>	<b>Target population</b>	<b>Stratified sampling</b>	<b>Sample size</b>
Production	47	33	33
Sales	36	25	25
Technical	31	22	22
Marketing & HR	57	40	40
<b>Total</b>	<b>171</b>	<b>120</b>	<b>120</b>

**SOURCE: Researcher (2022)**

[35], suggested that a sample is regarded as large if it exceeds 30 and therefore 120 was considered an appropriate size for this study. This study utilized primary and secondary sources. Primary data collection was done using structured questionnaires since the study was founded on a quantitative research approach. Different literature sources provided secondary data and were helpful in explaining the study’s variables. The questionnaires had closed ended questions that were convenient to analyze. A Likert scale of five response categories was adopted in measuring the research questions. Self-administered structured questionnaires were used to obtain opinions from the respondents. This helped in collecting information that was to be analyzed and expressed using figures. The questionnaires were arranged in sections comprised of demographic questions followed by questions framed according to the research objectives. Piloting was carried out to pretest

research questions. Under this study, piloting was carried out on 10% of the sample size. It constituted respondents that were not to be used in the final study. The pilot results were helpful in correcting pitfalls in the questionnaire. Cronbach Alpha coefficient was used in a reliability test to assess the consistency of the respondents’ answers. SPSS version 24 was used for this purpose. A coefficient of 0.80 was found reliable and significant for this study. To test validity, the research questions were tested and pretested to randomized sample for accuracy by use of content validity. This ensured that the questions accurately measured what is needed. The quantitative data in this research was analyzed by descriptive and inferential statistics with the aid SPSS version 24. In this study, descriptive statistics included frequencies and percentages based on Likert scale of 5 responses. Furthermore, data was evaluated inferentially using ANOVA and a regression analysis was

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employed in order to assess the correlation between the research variables. The hypothesis of this research was be tested at 0.05 confidence level. This informed the basis of rejecting or accepting the null hypothesis. The analyzed data was presented in ways that are easy to understand the results using suitable graphs and tables by aid of Microsoft excel software. The model  $y = \alpha + \beta_1 X_1 + u$  was subjected to a test using linear regression to establish whether employee skills were a predictor of performance of manufacturing industry. Where Y =dependent variable (performance of manufacturing industry) X1= independent variable (employee skills)

$\alpha$  = constant

$\beta_1$  =the coefficient of the independent variable u = the error term.

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Research ethics were taken into consideration in this study at all levels to avoid inconveniences. The researcher sought permission from the school of postgraduate studies after the presentation of the proposal, and an introductory letter was provided to allow the data collection at the research site (Bidco Africa). The researcher followed all the steps needed to collect data to meet the ethical standards that are requested to proceed with the research. The researcher ensured that the confidentiality of the respondents was kept, participation was voluntary and that no respondent was coerced to answer the research questions. The intentions of the research were well explained to the respondents.

## RESULTS

### Response Rate

120 respondents were targeted to respond to research questions, but only 98 respondents responded. This represented

a response rate of 82 %. [36, 37] observe that a response rate of 50% is adequate for a study.

### Descriptive Analysis of Employees' Skills on Organizational Performance

This study analyzed the effects of employees' skills on the performance of manufacturing industries. To ascertain the influence of employees' skills on improved organizational performance, the results showed that 51.5% strongly agreed, 35.1% agreed 5.2% were not sure, 5.2% disagreed while 3.1% strongly disagreed with this statement. On the question on whether employee skills are thoroughly checked to meet the organization's needs, 11.3% strongly disagreed, 54.6% of the respondents agreed, 18.6% were not sure, 8.2% disagreed while and 7.2% strongly disagreed. On the statement whether employee skills are enhanced through regular training sessions, 33.0% strongly agreed, 34.0% agreed, 13.4% strongly

disagreed, and 11.3% were not sure while 8.2% disagreed. To ascertain on whether organizational performance is improved by fostering innovation, most of the respondents 43.3% agreed, 26.8% strongly agreed, 9.3% disagreed while 5.2% strongly disagreed with the statement and 11.3% were not sure. Furthermore, to find out if flexibility enables employees to perform better, 40.2% of respondents strongly agreed, 35.1% agreed, 9.3% disagreed while 6.2% strongly disagreed and 9.3% were not sure. Finally, to ascertain on whether skill distribution is effectively implemented to meet the organization's needs, 44.9% agreed, 23.5% strongly agreed, 12.2% were uncertain, 11.2% disagreed while 8.2% strongly disagreed as shown in Table 3.

**Table 3: Employees' Skills on Organizational Performance**

	Strongly Agree		Agree		Not Sure		Disagree		Strongly Disagree	
	f	%	F	%	F	%	F	%	F	%
Employee skills contribute to improved organizational performance	50	51.5%	34	35.1%	5	5.2%	5	5.2%	3	3.1%
Employee skills are thoroughly checked to meet the organization's needs	11	11.3%	53	54.6%	18	18.6%	8	8.2%	7	7.2%
Employee skills are enhanced through regular training sessions	32	33.0%	33	34.0%	11	11.3%	8	8.2%	13	13.4%
Organizational performance is improved by fostering innovation	26	26.8%	42	43.3%	15	15.5%	9	9.3%	5	5.2%
Flexibility enables employees to perform better	39	40.2%	34	35.1%	9	9.3%	9	9.3%	6	6.2%
Skill distribution is effectively implemented to meet the organization's needs	23	23.5%	44	44.9%	12	12.2%	11	11.2%	8	8.2%

**Source: Researcher (2022)**

#### **Linear Regression Analysis of Employees' Skills on Organizational Performance**

Table 4 represents a regression model on employees' skills and organizational performance. As presented in the table, the coefficient of determination R square is 0.616 and R is 0.741 and Adjusted R Square 0.058 at 0.05, significance level. The coefficient of determination indicated that 61.6% of the variation on employees' skills influenced the performance of manufacturing industries. This implied that 5.8% of the variation in the

performance of manufacturing industries was explained by employees' skills. This implied that there was a significant relationship between employees' skills and performance of manufacturing industries. The study found out that the employee skills to the company's performance had a correlation of 74.1% while the goodness of model fitting was found to be 61.6% hence indicating that the parameters were okay.

**Table 4: Model Summary on Employees' Skills**

<b>Model Summary</b>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.741 <sup>a</sup>	.616	.058	1.3128328

**Dependent variable: Organizational Performance**

**Independent variable: Employees' Skills**

**Source: Researcher (2022)**

The ANOVA results shown in Table 5 confirmed further that the model fit is appropriate for this data. The calculated p value of 0.007 is less than the critical value of 0.05. This implied a positive significant correlation between employee skills and the company performance. The

F-statistics of 1.976, reflected that the results are highly significant ( $P < 0.001$ ) but it was very unlikely that they were computed by chance. The results showed that the model fit was significant and improved the ability to predict the outcome variable.

**Table 1: ANOVA**

ANOVA <sup>a</sup>						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	20.439	6	3.407	1.976	.007 <sup>b</sup>
	Residual	155.118	90	1.724		
	Total	175.557	96			

Source: Researcher (2022)

### Regression Summary of Employees' Skills on Organizational Performance

A statistical regression summary was computed to establish correlation coefficient of each indicator of employee' skills on organizational performance as shown in the Table 6

**Table 6: Regression Summary**

Model		Unstandardized Coefficients		T	Sig.
		B	Std. Error		
1	(Constant)	1.711	.414	4.136	.000
	Employee skills contribute to improved organizational performance	.175	.164	1.071	.287
	Employee skills are thoroughly checked to meet the organization's needs	.163	.150	1.088	.280
	Employee skills are enhanced through regular training sessions	.107	.144	.747	.457
	Organizational performance is improved by fostering innovation	-.322	.160	-2.017	.047
	Flexibility enables employees to perform better	.228	.169	1.351	.180
	Skill distribution is effectively implemented to meet the organization's needs	-.035	.154	-.225	.823

The regression summary indicated that flexibility enables employees to perform better, this had the highest correlation with a correlation of 0.228 while

organizational performance is improved by fostering innovation had the least correlation with a correlation of -0.322.

### Hypothesis Testing

To determine whether employees' skills influence performance of manufacturing industries,  $H_{01}$  hypothesis which states that "There is no significant relationship between employee's skills and the

performance of manufacturing industries" was tested.

**Decision rule:** If the calculated p value is found to be less than the critical value of 0.05, then the null hypothesis is rejected. ANOVA results indicated in Table 5

confirmed the appropriateness of the model fit for this data since the computed p value of 0.007 was much smaller compared to critical value of 0.05. These findings implied the existence of a significant relationship between employees' skills and performance of

Bahizi and Ongesa manufacturing industries. This led to a rejection of the null hypothesis and the adoption of an alternative hypothesis which states that, "There is a significant relationship between employees' skills and performance of manufacturing industries" is accepted.

### **Discussion of Findings**

#### **Employees Skills and Performance of Manufacturing Industries**

The respondents were asked to give their views on whether employees' skills influence organizational performance. The results showed that majority of the respondents 51.5% strongly agreed while 3.1% strongly disagreed with the statement. On the statement on whether employee skills are thoroughly checked to meet the organization's needs, majority of the 54.6% agreed while 7.2% strongly disagreed. On the statement whether employee skills are enhanced through regular training sessions, 34.0% agreed while 8.2% disagreed. Asked on whether fostering innovation improved organizational performance, most of the respondents 43.3% agreed 5.2% strongly disagreed with the statement. Further asked on whether flexibility enables employees to perform better, 40.2% of respondents strongly agreed, while 6.2% strongly. Finally, on whether skill distribution is effectively implemented to meet the organization's needs, 44.9% agreed while 8.2% strongly disagreed that. The ANOVA tabulation indicated that there was statistically a significant relationship between the employees' skills and the organizational performance since the p value obtained was 0.007 which is less than the critical value of 0.05 as shown in Table 16. The results concurred with [38] findings which found out that employees' skills enhance organizational performance in an effective way and simultaneously stabilizes the organization. The findings further concurred with [39, 40] who argued that the skills of employees are a prominent factor to the performance of

organizations when the work and workplace environment are conducive to performance enhancement. Employee skills needed to the organization are those demanded in the labor market. Organizational performance requires knowledgeable and skilled employees able to adapt and maintain a flexibility and focus towards the future in tackling the rapid organizational changes. The study observed that employee skills are increased through training and development activities that enable employees with skills most relevant to the tasks performed. On the same vein, [41] noted that employee skills and qualifications require different analyses as that employees need to identify distinct skills from the formal education and informal learning and match them with current works in consideration of the hidden skills that may be useful to the organization. These finding also concurred with those cited by [42] who asserted that organizational performance through employees' skills is attained by enhancing their confidence at work and by making them aware of the roles and responsibilities vested to them. They also noted that competent employees are a great asset to the organization as they position the company amongst the best within the industry it operates, hence fostering the organizational performance. The level of organizational performance is also reached by cultivating flexibility and innovation as well as the acknowledgement of competencies gained through training.

### **CONCLUSION**

The findings of this study established a significant positive relationship between skills of workers and performance of manufacturing industries. Sufficient

employment skills help to improve organizational performance of manufacturing companies.

### RECOMMENDATIONS

Regular training of workforce in the manufacturing companies should be encouraged and enhanced to equip employees with adequate relevant skills. This would make adaptable and flexible in

the dynamic environment. Consequently, this will enhance their efficiency in the realization of organizational goals and objectives.

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