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A Study on Impact of Automation and Workforce Dynamics in Ponlait Co-Operative Society

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ABSTRACT
This research explores the effects of automation on workforce dynamics within Ponlait, a leading dairy producer. As industries increasingly adopt advanced technologies, the integration of automation into Ponlait's operations has resulted in notable changes to labor practices, productivity levels, and organizational efciency. The study examines the inuence of automation on job roles, required skills, and employees' adaptability. Employing both qualitative and quantitative approaches, it evaluates how the company balances technological advancements with workforce stability. Key outcomes reveal that automation simplies repetitive tasks, improves precision, and enhances cost-effectiveness, while also presenting challenges such as workforce displacement and the demand for skill development. Furthermore, the study examines employee perspectives on automation and the company's strategies to create a collaborative atmosphere where human skills and automated systems work together effectively. The ndings aim to guide the alignment of technological progress with workforce growth, promoting a balanced and sustainable transition. This research contributes to the broader understanding of how technology and labor intersect in the modern industrial landscape.

Keywords: Automation, Workforce Dynamics, Technological Advancements, Labor Practices, Productivity, Workforce Adaptability

1. INTRODUCTION

The work environment encompasses all elements inuencing employees during their work, including physical factors such as tools, ventilation, noise, and lighting, as well as psychological aspects like workplace organization and overall wellbeing. It also involves social interactions with colleagues, subordinates, and supervisors, fostering an atmosphere free from harassment or hostility. A hostile environment arises when inappropriate behavior disrupts performance or creates intimidation. Additionally, maintaining a healthy workspace through proper ventilation and the absence of harmful conditions such as mold is essential to ensuring employee health and comfort.

OBJECTIVES

- To evaluate how well the workforce adapts to automation

- To explore the role of automation in enhancing service quality

2. REVIEW OF LITERATURE

Kohun (2014) describes the work environment as a combination of various forces and factors inuencing employee activities and productivity. It encompasses the relationships between employees and their workplace conditions.

Brenner (2014) stressed the importance of designing workplaces that encourage knowledge sharing, which improves organizational efciency and motivates employees. A conducive environment supports satisfaction and the free exchange of ideas, driving better productivity.

Opperman (2014) highlighted three primary components of the work environment: technical, human, and organizational. The technical environment includes tools, equipment, and infrastructure that enable employees to perform their tasks effectively. The human environment focuses on relationships among employees, team dynamics, and leadership. The organizational environment involves systems, practices, and values that impact overall productivity.

Robbins (2015) identied seven key attributes of organizational culture: innovation, attention to detail, outcome orientation, people orientation, team orientation, competitiveness, and stability. These elements collectively foster creativity, teamwork, and sustained organizational growth.

Sabir et al. (2015) connected employee productivity to achieving organizational objectives, emphasizing its multi-faceted nature. A thoughtfully designed workplace aligns personal and organizational goals. Taiwo (2015) underscored the role of an attractive, motivating work environment in instilling pride and purpose among employees. Properly designed workplaces enhance productivity, commitment, and innovation.

Yaqoob (2015) examined cultural variations in workplace dynamics. In individualistic cultures, employees prioritize personal goals, while collectivist cultures emphasize group objectives. Aligning workplace strategies with cultural values fosters engagement. Cooper & Dewe (2016) highlighted the importance of ergonomic workplaces in reducing physical discomfort and enhancing employee compatibility with their work environment. Such designs promote well-being and efciency. 0% Plagiarized Content 100% Page 1 of 3 McCoy and Evans (2016) argued that well-designed workplace elements alleviate stress and encourage collaboration. Improvements in physical workplace designs can increase productivity by 5-10%. Brill (2016) analyzed cultural differences in workplace structures. Masculine cultures emphasize achievement and tangible rewards, while feminine cultures value job satisfaction and balance. Workplace designs should reect these cultural needs. Amir (2017) identied ofce layout and comfort as pivotal elements in workplace planning. These factors inuence organizational culture and employee behavior, encouraging engagement and performance.

Hasun & Makhbul (2017) observed that workplace factors signicantly affect employee outcomes. Social dynamics, technological changes, and exible work arrangements have reshaped contemporary work settings. Boles et al. (2017) linked a positive work environment to decreased absenteeism and enhanced performance. Strategies such as optimizing job design and improving facilities foster employee productivity.

Kotter and Heskett (2018) distinguished between contingency and universal models of organizational culture. The contingency model aligns culture with environmental needs, while the universal model emphasizes serving customers, employees, and shareholders for sustainable performance.

Chandrasekar (2018) explored the interplay between work, workplace, and tools. Key factors like mana-

gerial support, feedback, and incentives play vital roles in shaping employee performance. Research identied job aids, support systems, and physical environment as critical inuences.

Hofstede (2019) examined six dimensions of organizational culture—power distance, individualism, uncertainty avoidance, masculinity, long-term orientation, and indulgence—demonstrating their impact on leadership and strategic planning.

Leaman (2019) addressed factors such as lighting, ventilation, and noise, which affect employee satisfaction and performance. Functional comfort signicantly inuences task efciency.

Ettner & Grazyna (2019) highlighted the relationship between workplace design and employee health. They found that workplace factors affect both physiological and psychological outcomes, shaping long-term productivity.

McCoy and Evans (2019) reiterated the value of physical workplace design in reducing stress and fostering workplace relationships. Enhanced designs improve employee output and collaboration.

Gu, Supat, and Kuo (2022) studied the impact of work environment on task performance. Their research revealed that a positive workplace environment enhances commitment and achievementstriving abilities, which in turn improve overall performance.

3. RESEARCH METHODOLOGY

This method provides every individual within the group an equal likelihood of selection, maintaining fairness and objectivity. The selected sample units were based on accessibility and relevance to the research The study employs a descriptive research design to analyse marketing strategies and their effects on sales factors. Data collection was conducted through surveys and other investigative methods. The sampling technique used was simple random sampling, targeting employees at Supreme Industries Limited, Puducherry. A sample size of 105 employees was chosen for the study, with data collection spanning over one month.

3.1 Sampling Plan:

The study employed a simple random sampling technique, ensuring participants were chosen impartially from the populationobjectives.

3.1.1 Population

The population refers to the larger group from which the sample is drawn, typically sharing common characteristics. In this study, the population consists of employees working at Supreme Industries Limited, Puducherry, ensuring the research findings are representative of this specific workplace.

3.1.2 Sample

A sample is a subset selected from the population to represent the larger group for data collection and analysis. In this research, the sample comprises employees from Supreme Industries Limited, chosen to provide insights that can be generalized to the entire workforce.

3.1.3 Sample size & Period:

The research involved 105 employees as the sample size, with data collection conducted over a period of one month to ensure comprehensive and timely insights.

4. DATA ANALYSIS AND INTERPRETATION

CHI-SQUARE:

HYPOTHESIS

NULL HYPOTHESIS (H0)

There is no signicant association between the level of satisfaction in maintaining motivation after setbacks and the belief that learning from failures strengthens commitment to achieving work goals.

ALTERNATIVE HYPOTHESIS (H1)

There is a signicant relationship between the ability to sustain motivation after setbacks and the view that learning from failures enhances dedication to achieving professional objectives.

CROSS TABULATION

TABLE 1 CHI-SQUARE

			How satisfied are you with the opportunities for skill development resulting from automation			
			1	2	3	Total
Educational Qualification	1	Count	2	5	4	11
		Expected Count	1.3	5.6	4.2	11.0
	2	Count	5	21	26	52
		Expected Count	5.9	26.2	19.8	52.0
	3	Count	5	27	10	42
		Expected Count	4.8	21.2	16.0	42.0
Total		Count	12	53	40	105
		Expected Count	12.0	53.0	40.0	105.0

	Value	df	Asymptotic Significance(2-sided)
Pearson Chi-Square	7.481[a]	4	.113
Likelihood Ratio	7.549	4	.110
Linear-by-Linear Association	1.477	1	.224
N of Valid Cases	105		

3 cells (33.3%) have expected count less than 5. The minimum expected count is 1.26.

INFERENCE

The analysis using the Chi-Square test indicates no signicant relationship between the variables 0% Plagiarized Content 100% Page 1 of 2 studied. The p-values for both the Pearson Chi-Square test (p = 0.113) and the Likelihood Ratio test (p = 0.110) are greater than the commonly used threshold of 0.05.

Furthermore, the Linear-by-Linear Association test also shows no signicant trend (p = 0.224). It is important to consider that 33.3% of the cells had expected frequencies less than 5, which could inuence the reliability of these ndings. Based on the results, the null hypothesis (H_0) is accepted, while the alternative hypothesis (H_1) is rejected

CORRELATION:

Objective: To investigate if there is a connection between the dependent and independent variables

Hypotheses:

Null Hypothesis (H_0): There is no association between the dependent and independent variables. If the p-value is below 0.05, the null hypothesis is supported.

Alternative Hypothesis (H_1): A relationship is present between the dependent and independent variables. If the p-value exceeds 0.05, the alternative hypothesis will be dismissed

TABLE 2 CORRELATION

		"Automation reducing long-term health risks?"	"How has automation improved efficiency?"
"Automation reducing long-term health risks?"	Pearson Correlation	1	-.233*
	Sig. (2-tailed)		.017
	N	105	105
"How has automation improved efficiency"	Pearson Correlation	-.233*	1
	Sig. (2-tailed)	.017	
	N	105	105
*. Correlation is significant at the 0.05 level (2-tailed).			

INFERENCE

The Pearson correlation of -0.233 indicates a modest negative relationship between "Automation reducing long-term health risks" and "How has automation improved efciency?". The correlation is deemed statistically signicant, as the p-value of 0.017 is below the 0.05 threshold for signicance. As a result, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted, suggesting a meaningful connection between these two variables.

ANOVA

AIM: To determine if there is an association between the dependent and independent variable.

HYPOTHESIS

NULL HYPOTHESIS

There is no association between the dependent variable and independent variable.

H0<0.05 Thus, Null hypothesis is accepted.

ALTERNATIVE HYPOTHESIS

There is a association between the dependent variable and independent variable. H1>0.05 Thus, Alternati-

ve hypothesis is rejected.

TABLE 3: ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Age	Between Groups	.139	1	.139	.288	.593
	Within Groups	49.918	103	.485		
	Total	50.057	104			
"Automation improves work-life balance	Between Groups	.096	1	.096	.380	.539
	Within Groups	25.961	103	.252		
	Total	26.057	104			
"Will automation enhance productivity"	Between Groups	.298	1	.298	1.209	.274
	Within Groups	25.416	103	.247		
	Total	25.714	104			

INFERENCE

The results from the ANOVA analysis show that the p-values for the three variables: "Age" (p = 0.593), "Automation improves work-life balance" (p = 0.539), and "Will automation enhance productivity" (p = 0.274) are all above the threshold of 0.05. This indicates that there are no statistically significant differences between the groups for any of these variables. Therefore, we fail to reject the null hypothesis, suggesting that there is no significant relationship between the dependent and independent variables. As a result, the alternative hypothesis is not supported

5. FINDINGS

CHI-SQUARE

The Chi-Square test results reveal that the p-values for Pearson Chi-Square (0.536), Continuity Correction (0.738), Likelihood Ratio (0.528), and Fisher's Exact Test (0.776) are all greater than the signicance level of 0.05. This indicates no statistically signicant relationship between the variables under consideration

RESULT:

As the p-values exceed 0.05, the null hypothesis, which states that there is no association between the variables, is accepted. Consequently, the alternative hypothesis, suggesting an association, is rejected.

CORRELATION

The Pearson correlation coefcient of -0.233 indicates a weak negative association between "Automation reducing long-term health risks" and "How has automation improved efciency." The relationship is statistically signicant, as evidenced by the p-value of 0.017, which is less than the threshold of 0.05

RESULT:

As the p-value is below 0.05, the null hypothesis (H_0) is dismissed, and the alternative hypothesis (H_1) is accepted, conrming a relationship between the two variables.

ANOVA

The ANOVA results indicate that the p-values for "Age" (0.593), "Automation improves work-life balance" (0.539), and "Will automation enhance productivity" (0.274) are all greater than the

threshold of 0.05. This suggests that there are no signicant differences between the groups for these variable

RESULT:

The null hypothesis is accepted, indicating no signicant association between the dependent and independent variables. Consequently, the alternative hypothesis is rejected.

6. CONCLUSION

Based on the analysis, the study on automation and workforce dynamics in Ponlait reveals that there is no signicant association between most of the variables investigated. The Chi-Square test results and 0% Plagiarized Content 100% Page 1 of 2 ANOVA analysis indicate that factors such as age, automation's impact on work-life balance, and productivity do not exhibit signicant differences or associations. Additionally, the correlation between automation's effects on health risks and efciency shows a weak negative relationship. Consequently, the null hypotheses are accepted for most tests, suggesting that automation's inuence on employee dynamics at Ponlait may not be as substantial as anticipated. These ndings highlight the need for further exploration into factors affecting workforce adaptation to automation and its broader organizational impact.

REFERENCES

TEXTBOOKS

1. K. Aswathappa, (2008) “Human Resource Management”, Tata Mcgraw Hill publishing ltd, New Delhi. Fifth Edition, Page Number 24-26
2. Dr. C.B.Gupta, (2001)” Human Resource Management”, Sultan Chand & Sons, New Delhi, Page number 62-78.
3. Fred luthas, “Organisation behaviour”, 5th edition, Chand & co Ltd, Page number 67- 72.
4. S.N. Murthy,Dr.V. Bhojanna (2008) “Business Research Methods” published by Excel Books, New Delhi, Second Edition, Page number 64-72.
5. Stephen.P.Robbins, “Organisational behaviour”, 13th edition, Prentice, Hall of India, Page number 118-127.

JOURANLS

1. Lim, B. (1995). Examining the organizational culture and organizational performance link. Leadership & Organization Development Journal, 16(5).
2. Saa-Pere, Petra De and Garcia-Falcon, Juan Manuel (2002). A resource-based view of human resource management and organizational capabilities development. Int. Journal of Human Resource Management, 13(1), 123-140.
3. Ben Saad, G., & Abbas, M. (2018). The impact of organizational culture on job performance: a study of Saudi Arabian public sector work culture. Problems and Perspectives in Management, 16(3), 207-218.
4. Nwakoby, N., Okoye, J., & Anugwu, C. (2019). Effect of Organizational Culture on Employee Performance in Selected Deposit Money Banks in Enugu State.
5. Journal of Economics and Business, 2(4), 1213- 1225.
6. Sekar,C.(2011): Workplace Environment and its impact on organizational performance in public sector organizations , International Journal of Enterprise Computing and Business System International Systems, Vol. 1 Issue 1 January 2011.

WEBSITES

- www.academia.edu
- www.ponlait.coop
- www.cooperative.py.gov.in
- www.food.dupont.com