

A Study on the Impact of Automation Strategy on Workforce Efficiency in Raneko Tech Private Limited At Villiyanur

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ABSTRACT

This study investigates the multifaceted relationship between automation strategy and workforce efficiency in contemporary organizations. As industries increasingly adopt automation technologies, understanding the nuanced effects on workforce dynamics becomes imperative. Analyzing data from diverse sectors, we explore how automation strategies influence productivity, job roles, and overall operational efficiency. Key findings reveal that a well-designed automation strategy aligns with enhanced workforce efficiency, streamlining repetitive tasks and allowing human capital to focus on complex decision-making and creativity. However, the study also uncovers potential challenges, such as skill gaps and resistance to change, highlighting the importance of a holistic approach to workforce development alongside automation implementation.

Keywords: automation, workforce efficiency, productivity, skill development

1. INTRODUCTION

Industry automation is one of the essential roles playing part of the manufacturing, operations, production, controlling processes; in every sector we cannot imagine a company without automation in today's scenario, life without multimedia and industry without automation are the things we cannot imagine. Although automation and robotics make the work easier, safer and faster but it is somehow affecting the human workforce and indirectly the social wellbeing of employees. Automation invented in 18th century grows in 19th century and now they may replace human interventions in industrial process. And from that scenario we can predict the day that there will be no employees expect machines at work place. This is the most difficult task to manage importance of both human as well as machine at workplace. For instance, a cited report by Oxford economists¹ forecasts that up to 47% of total U.S. employment is at high risk of being highly replace by automation. Automation in different sector is growing rapidly impacted employees as well as employer. Sometimes automation is boon for highly skilled and educated executive, supervisory employees because it may be helpful for them to complete the task within deadline of management. It is also advantageous to workers at workplace for performing high risk task such as handling heavy, critical material, foundry and furnaces work, assembly work all such type of work can be performed by using automation robotics, different technologies and devices.

Physical exertion and health safety of workers can be improvised by automation. Employer can avoid production rush, risk in hazardous areas like safety and accidental issues, wages on over time, employer can work more effectively and more efficiently for achieving the goal or objective and to withstand with today's global and competitive world. Productivity and yield improvement can be achieved by well-designed automation.

OBJECTIVES OF THE STUDY

- To find the automation strategy on employee performance.
- To identify the effect of automation strategy on workforce effectiveness.
- To ascertain the factors that affect automation strategy on workforce productivity.

2. REVIEW OF LITERATURE

Kathuria (2017) suggested structural and infrastructural issues as two pillars of manufacturing strategy. Structural issues set the process and technology for operations, whereas infrastructure provides the strategy with a long-term competitive edge by continuously improving on human resource policies, quality management systems, organization culture, and information technology. Infrastructural issues are long-term goals and support the structural issues. Infrastructural issues are developed through persistent day-to-day use and with the commitment of top management and teamwork at all levels. These are intangible and developed over a certain period of time with consistent use. Effective use of infrastructural issues with structural issues leads a company toward manufacturing excellence.

Deshmukh (2015) Manufacturing strategy must describe the contribution that manufacturing makes to the cost, quality, availability, and future objectives of the business. It consists of process and content. Process refers to how strategy is made and addresses content issues of competitive priorities, which include quality, delivery, flexibility, and cost aspects. Process means a pattern or procedure in which strategy is developed and implemented.

Vaidya (2011) contributes to the current body of research through the identification of nine-pillars of Industry technologies. However, the rapid nature of technological advancements within the industry landscape requires ongoing research into emerging technologies. However, the framework created serves as a basis for understanding the technological environment that today's workforce must be prepared.

3. RESEARCH METHODOLOGY

The research challenge can be approached methodically using research methodology. It is a detailed outline of how data will be gathered and analysed for a research endeavour. Research methodology can be thought of as the scientific study of how research is conducted. It might include a wide range of research projects, from straightforward description and examination to the design of complex experiments. A clear objective provided the basis of design of the project. Since the main objective of this study is to study the employee retention factors it was decided to use descriptive research design including, survey and fact-finding enquiries of different kinds, which found out the most suitable design in order to carry out the project.

4. DATA ANALYSIS AND INTERPRETATION

TABLE 1 SHOWING ANOVA ANALYSIS

ANOVA					
Q1					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	7.579	4	1.895	4.099	.004
Within Groups	45.767	99	.462		
Total	53.346	103			

INFERENCE

From the above table, it is inferred that there is a significant relationship between two variables. Hence null hypothesis is less than the calculated value therefore alternative hypothesis is accepted.

TABLE 2 SHOWING ANOVA ANALYSIS

ANOVA					
Q4					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4.998	3	1.666	2.539	.061
Within Groups	65.618	100	.656		
Total	70.615	103			

INFERENCE

From the above table, it is inferred that there is a significant relationship between two variables. Hence null hypothesis is greater than the calculated value therefore alternative hypothesis is rejected.

TABLE 2 SHOWING CORRELATION ANALYSIS

Correlations

		Q9	Q18
Q9	Pearson Correlation	1	.253**
	Sig. (2-tailed)		.010
	N	104	104
Q18	Pearson Correlation	.253**	1
	Sig. (2-tailed)	.010	
	N	104	104

** . Correlation is significant at the 0.01 level (2-tailed).

INFERENCE

From the above table, it is inferred that there is a significant relationship between two variables. Hence null hypothesis is greater than the calculated value therefore alternative hypothesis is rejected.

5. FINDINGS

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6. CONCLUSION

In conclusion, implementing an automation strategy at RANEKO TECH is a prudent move to enhance workforce efficiency. By streamlining routine tasks, reducing manual errors, and promoting a more agile work environment, automation can significantly contribute to increased productivity and employee satisfaction. It's essential to prioritize a thoughtful transition, ensuring proper training and communication to empower the workforce and harness the full potential of automation. As RANEKO TECH embraces this strategy, it is poised to achieve not only operational excellence but also position itself for future innovation and growth in the ever-evolving tech landscape.

7. REFERENCE

1. Brynjolfsson, E., & McAfee, A. (2014). *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*.
2. Arntz, M., Gregory, T., & Zierahn, U. (2016). *The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis*.
3. Frey, C. B., & Osborne, M. A. (2017). *The future of employment: How susceptible are jobs to computerization?*
4. World Economic Forum. (2018). *The Future of Jobs Report*.
5. Chui, M., Manyika, J., & Miremadi, M. (2016). *Where machines could replace humans—and where they can't (yet)*.
6. Autor, D. H. (2015). *Why Are There Still So Many Jobs? The History and Future of Workplace Automation*.
7. McKinsey Global Institute. (2017). *Jobs lost, jobs gained: Workforce transitions in a time of automation*.
8. Acemoglu, D., & Restrepo, P. (2019). *Automation and new tasks: How technology displaces and reinstates labor*.
9. Ford, M. (2015). *Rise of the Robots: Technology and the Threat of a Jobless Future*.
10. Bessen, J. E. (2019). *AI and Jobs: The Role of Demand*.
11. Arora, P., & Bagde, S. (2019). *Impact of automation on employment in Indian IT sector: A case study*.
12. Manuti, A., et al. (2018). "Automation, Artificial Intelligence, and Human–Machine Collaboration: The HRM Impact."
13. Kochan, T., et al. (2018). *Toward a Sustainable Society: Parallels in Artificial Intelligence and Labor*.
14. Cappelli, P. (2015). *Will there really be a shortage of for-profit college grads?*