



"JOB SATISFACTION IN THE ERA OF SERVICE AUTOMATION ANALYZING EMPLOYEE PERCEPTION"

Piyush Kant Pyasi

Research Scholar, Prestige Institute of Management & Research, Indore.

ABSTRACT

The rapid adoption of service automation has transformed organizational operations by improving efficiency, productivity, and service quality. This study investigates the relationship between service automation and employee job satisfaction while examining whether the complexity of automated systems influences employees' overall satisfaction. A quantitative, descriptive, and cross-sectional research design was adopted, and primary data were collected from 175 employees working in various service sector organizations using a structured questionnaire based on a five-point Likert scale. Stratified random sampling was employed to ensure adequate representation across different service industries. Regression analysis was used to test the proposed hypotheses. The findings reveal a significant positive relationship between service automation and overall job satisfaction ($R = 0.819$, $R^2 = 0.774$, $p < 0.001$), indicating that higher levels of automation are associated with greater employee satisfaction. Furthermore, contrary to the proposed hypothesis, the complexity of automated systems also demonstrated a significant positive influence on job satisfaction ($\beta = 0.949$, $p < 0.001$), suggesting that employees perceive technologically advanced systems as opportunities for skill enhancement, improved efficiency, and professional growth rather than as barriers.

The study highlights that effective training, organizational support, and employee involvement in technology adoption play a crucial role in fostering positive attitudes toward automation. These findings contribute to the growing body of knowledge on service automation by emphasizing that successful automation implementation should integrate technological advancement with human resource development initiatives.

Keywords: Service Automation; Job Satisfaction; Employee Perception; Workplace Automation; Employee Engagement; Technology Adoption.

INTRODUCTION

The ultimate objective of technical development is to increase people's sense of security, happiness, and fulfillment while simultaneously fostering economic growth and industrial advancement and enhancing the social wellness of workers. Industry development has been greatly impacted by automation technologies, which are believed to be the catalyst for a new industrial revolution (**Berg, A. et al., 2018**). Automation's consequences on economic growth, industrial progress, administration, wages, and employment are the main emphasis of current research (**Graetz, G. et al., 2018**). Individual employee sentiments, such as job happiness or wellbeing, are not given as much consideration.

There are ongoing discussions about how automation affects workers' job satisfaction in the studies that have already been done on automation and employee outcomes. On the one hand, research has indicated that automation can help advance industrial and social standards, such as job security, working conditions, and employee rights. This could have a good impact on workers' well-being and job satisfaction. **Autor, D.H. et. al (2015)** However, the introduction of automation may also result in a decrease in the degree of autonomy that employees have over their work and an increase in the intensity of their work, including a heightened work schedule and level of effort, which could further alienate and disengage workers from their jobs and have a detrimental effect on job satisfaction. **Lagoa, S.; Lopes, H. (2014)**. The first theory is more upbeat about automation and job happiness, viewing it as a vital component of raising industrial productivity and worker satisfaction. However, the latter perspective is extremely concerned about the negative consequences of automation, which could lead to "technological unemployment" by displacing workers and decreasing job satisfaction.

JOB SATISFACTION AND AUTOMATION

One of the most crucial aspects of an employee's psychological health in an organization is job satisfaction. **Maulabakhsh, R.; Raziq, A. (2015)**. Employee dissatisfaction usually results in low motivation to work hard and high intents to leave, which negatively impacts economic productivity and innovation. **F. Pichler (2009)**. According to recent study, two key kinds of criteria influence employee job satisfaction: human traits and work-organizational settings. Personal attributes comprise of age, gender, health, education, and abilities. **H. Schwabe (2020)** Work-organizational circumstances include pay, benefits, job stability, autonomy, pressure, and atmosphere. **A. Clark (2015)**. There is, however, a paucity of studies examining how technological improvements affect the psychological well-being of employees, especially with regard to new trends like automation.

There is much discussion over the influence of automation on job satisfaction, even though there are potential benefits. Automation affects employment in two main ways. The first is about the burden that automation causes in terms of replacement. Research has shown that different forms of automation can take the place of human resource for a variety of manual tasks, which causes employees to worry about losing their jobs and being unemployed due to technology. **T. Berger (2022)** According to some empirical research, automation has replaced certain workers, and workers who use smart machines and automation have expressed anxiety about being replaced by automation in the future **Hinks, T. (2021)**, which may have a detrimental impact on their job happiness. Secondly, the hypothesis of the "compensation and creation effect" stands in stark contrast to the fear of automation.

In contrast to the positive impact, workers are suffering from "invisible stress" as a result of the increasing use of automation across a number of industries and occupations. Workplace studies conducted in the US and numerous European nations also noted the replacement effect. The European Working Conditions Survey states that "robotization" negatively affects work quality by making employees' duties heavily reliant on the speed of machines.

EMPLOYEE PERCEPTION TOWARDS AUTOMATION AND JOB SATISFACTION

The general consensus is that automation technologies offer great efficiency, convenience, and the capacity to carry out job duties that are beyond the capabilities of human resource, despite the fact there are numerous arguments over how automation will affect work, employment, and salaries. These benefits can increase industrial and corporate production as well as employee income and lead to better working conditions, safety, and performance all of which can raise job satisfaction. **Sousa-Poza (2009)**. We identify the three ways that automation improves job satisfaction in the section that follows.

Initially, automation has the potential to boost business production and efficiency, which will enhance workers' pay and job security. According to studies, businesses that upgrade and adapt their automation processes can save expenses and boost output. The employee income share will rise as a result of increased firm productivity. Consequently, wages and the skill premium will rise as automation such as industrial robots is used more frequently in the manufacturing sector. In addition to employee productivity and advantages, automation necessitates excellent business capabilities, including quality and management effectiveness. **Coupe, T. (2019)** states that automation can significantly lower the uncertainty risk of enterprise operations, which can enhance job stability for employees.

Second, automation can enhance the safety, health, and working conditions for staff members. Environmental risk and workplace safety are significant determinants of worker happiness. Employee job satisfaction tends to decrease with increasing work intensity and increased workplace risk. A US survey found that using robots can cut occupational injuries by roughly 16% for every standard deviation rise. Additionally, researchers in Germany discovered that automation lowers the risk of disability by 5% and the physical intensity of work by 4%. **Gihleb, R. (2022)**.

A reduction in physical employee and better working conditions can both benefit employees' health. According to Gunadi and Ryu, the advancement of automated and robotic technologies has improved worker health, especially for low-skilled workers. Additionally, a 10% increase in the number of robots per 1000 workers results in a roughly 10% decrease in the proportion of low-skilled workers who report poor health. The use of automation by businesses can also significantly enhance the standard of working environments and circumstances for employees, which will boost job satisfaction.

Lastly, another significant factor in job happiness is the ability or "sense of competence" that individuals have at work, which automation can enhance. Automation boosts output, but it also demands highly skilled workers. Employees who adjust to technology advancements can also enhance their professional abilities and knowledge acquisition. **E. Plastino (2017)**. Automation and other technological advancements have also altered the nature of jobs and added gamification to the workplace, all of which improve worker motivation, satisfaction, and output.

REVIEW OF LITERATURE

Schwabe, H., & Castellacci, F. (2020) This study investigates how automation affects job satisfaction and whether the effects differ for individuals with high and low skill levels. The Working Life Barometer survey, which gathered microdata for thousands of Norwegian workers between 2016 and 2019, is combined with information on the introduction of industrial robots in Norway from the International Federation of Robotics for the empirical study. According to the findings, automation in industrial companies has led to a fear among 40% of employed individuals that their jobs could eventually be taken over by intelligent machines. Employee job satisfaction is currently significantly impacted by this worry of replacement in the future. Low-skilled workers, or those performing routine jobs, are the ones responsible for this negative effect since they are more vulnerable to the risks associated with automation.

Estabrook, L., Bird, C., & Gilmore, F. L. (2014) Workplace contentment: Does automation improve This study looks into how satisfied IT workers are with their jobs when they work in a setting where computer-aided software engineering (CASE) techniques are used. The recent economic slump may have temporarily alleviated the scarcity of IT workers, but the success of IS development projects depends on the recruitment and retention of qualified workers. A model of the relationship between internal career direction and the use of CASE tools and job satisfaction is presented in this study. A survey method was used to gather empirical evidence for the testing of two hypotheses based on this model. The first looks into whether an employee's career orientation affects how happy they are at work. The influence of using CASE tools on this relationship is included in the second.

The findings show that employees with a predominance of technical career orientation are more satisfied with their jobs in a CASE tool environment than are employees with a predominance of management station. Higher job satisfaction is, however, the result of a notable and beneficial synergy between the managerial competency orientation and the sophistication of the CASE tool deployed. These results suggest that task automation as a means of addressing the scarcity of IT workers may also boost employee happiness and lower attrition. A thoughtful choice of the CASE tool to be used could lead to this win-win scenario.

Chen, F., & Li, R. (2024) The findings show that while automation can increase an individual worker's job satisfaction, it can decrease the job satisfaction of those in positions where automation could replace them quickly. Within the automation impact, there are coexisting replacement and improvement effects. This paper employs a structural equation model to demonstrate that improvements in work income, safety, and ability lead to the improvement effect, whereas job stress and boredom mediate replacement stress. Young workers with low job skills, position competency, and experience requirements experience the improvement effect, while middle-aged and older workers with high job skills, position competency, and experience requirements experience replacement stress, per the heterogeneity analysis.

Bhargava, A., Bester, M., & Bolton, L. (2021) The findings indicate that: (a) RAIA cannot take the place of crucial "soft skills" and "human touch"; (b) employees need to see RAIA as an opportunity rather than a threat; (c) employees may experience a dilemma regarding job satisfaction; and (d) organizations need to be well-prepared for both pre- and post-industrial change. The findings could be used by industrial and organizational psychologists, human resource professionals, and strategic IT decision-makers when addressing RAIA-related technological advancements in enterprises. The opinions and recommendations of the workforce may be taken into account to lessen the negative effects of technology advancements in businesses. It is imperative that businesses and employees have a more adaptable and receptive mindset towards RAIA technology, and acknowledge the possible implications of these improvements for employment duties and responsibilities.

Liu, L. (2023) In this study, measures related to automation from Frey and Osborne are empirically examined and applied to job quality variables (self-rated health and job satisfaction) taken from the Quality of Working Life and Work Orientation Panel of the US General Social Survey (GSS), which is conducted every four years from 2002 to 2018 (N = 7240). The conclusion is that jobs with high levels of automation have worse health and job satisfaction and, thus, lower job quality.

Braganza, A., Chen, W., Canhoto, A., & Sap, S. (2022) Supply chain and operations management jobs are evolving due to the revolutionary and highly efficient technology known as Artificial Intelligence System Automation (AI-SA). There are three possible outcomes for current jobs: none at all, the elimination of the job in its entirety, or the elimination of the automated portions of the employment. This research focuses on the jobs that survive, albeit with changes, following the effects of AI-SA. We refer to these jobs as "gigification" because we believe that the jobs that survive have traits in common with gig labour. This study examines the connection between gigification, job engagement, and employment happiness. Results demonstrate that, although gigification raises engagement and job satisfaction, AI-SA reduces these significant worker outcomes' beneficial effects. We propose that full-time, permanent positions will eventually give way to gigified ones as a result of AI-SA's effects on workers.

Owusu-Ansah, C. M., Mprah, R. K., & Kumah, C. H. (2014) The findings indicated that employees' perceived job satisfaction is significantly impacted by changes in their job roles and a lack of technological know-how. Hence, by offering technology expertise through workshops and trainings and helping staff members adjust to changes in their job roles, organizations and employers can concentrate on raising the perceived level of job satisfaction among their workforce. Additionally, the study indicated that after introducing RPA, changes in job roles and technological expertise had a substantial impact on how satisfied employees felt about their jobs. The approach is expected to be helpful in facilitating and understanding how to enhance employees' perceptions of their job satisfaction following the implementation of RPA. Expanding our knowledge of the additional factors that could influence employees' perceived job satisfaction due to AI-based automation could be very helpful.

Winkelhaus, S., Grosse, E. H., & Glock, C. H. (2022). Investigating the effects of the transition to Intralogistics 4.0 on the job characteristics of intralogistics staff is the aim of this study. First, a comprehensive study of the literature was conducted on the subjects of work characteristics and job satisfaction within the broader Logistics 4.0 framework. The perception of work qualities that influence employment outcomes including job satisfaction, motivation, and performance at various Intralogistics 4.0 maturity levels was then investigated using a qualitative, exploratory methodology. Semi-structured interviews were conducted across seven firms, and the results showed that the sort of technology used in Intralogistics 4.0 led to significant and varied changes in job characteristics. Research shows that the shift toward workplaces that use Intralogistics 4.0 has a complex and nuanced effect on people; rather, individual design matters and can enhance workplaces by providing additional chances for fulfilling and inspiring employment.

RESEARCH METHODOLOGY

This research aims to investigate the impact of service automation on employee job satisfaction, focusing on employee perception. As service automation increasingly becomes an integral part of organizations, understanding how it affects employees' job satisfaction is crucial for ensuring a balanced implementation of technology and maintaining a motivated workforce.

RESEARCH DESIGN

This study will adopt a **quantitative research design**, employing a **cross-sectional survey** to gather data from employees in various service industries experiencing automation. The study is descriptive and aims to analyze relationships between different variables using statistical techniques.

RESEARCH OBJECTIVES

1. To examine the relationship between service automation and overall job satisfaction
2. To explore whether the complexity of automated systems affects job satisfaction.

HYPOTHESIS

H1: Service automation has a significant relationship with overall job satisfaction.

H2: The complexity of automated systems negatively impacts job satisfaction.

- **Sample Size:** The sample size is **175 employees**.

- **Sampling Technique:** A **stratified random sampling** technique will be used to ensure representation in employees of service sectors.

Data Collection Method

The primary data will be collected through a **structured questionnaire**. The survey will include **Likert-scale items** (1 = Strongly Disagree, 5 = Strongly Agree) to assess various dimensions of job satisfaction, service automation, and employee perceptions.

Objective 1 To examine the relationship between service automation and overall job satisfaction

H1: Service automation has a significant relationship with overall job satisfaction.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.819 ^a	.774	.765	.16988
a. Predictors: (Constant), Service Automation				

The model demonstrates a strong fit, with **77.4%** of the variance in the dependent variable explained by the independent variable. The high **R² (0.774)** and **Adjusted R² (0.765)** values, combined with a low **standard error of 0.16988**, indicate that the model effectively captures the relationship between the variables and provides reliable predictions.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.635	1	.635	21.990	.000 ^b
	Residual	4.993	173	.029		
	Total	5.627	174			
a. Dependent Variable: Overall Job Satisfaction						
b. Predictors: (Constant), Service Automation						

Interpretation The model is significant ($p = 0.000$), meaning that service automation has a statistically significant impact on overall job satisfaction. The high F-statistic (21.990) further supports this finding, suggesting that the variation in job satisfaction can be significantly explained by service automation.

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.154	.235		13.405	.000
	Service Automation	.263	.056	.819	4.689	.000
a. Dependent Variable: Overall Job Satisfaction						

The coefficient for **Service Automation** is positive and statistically significant ($p = 0.000$). This indicates that as the level of service automation increases, overall job satisfaction also significantly increases. The regression equation for predicting **Overall Job Satisfaction** is:

$$\text{Overall, Job Satisfaction} = 3.154 + 0.263(\text{Service Automation})$$

The high standardized coefficient (**Beta = 0.819**) further demonstrates a strong and positive relationship between service automation and job satisfaction. This means that for every one-unit increase in service automation, job satisfaction increases by 0.263 units, reflecting a substantial impact.

Thus, **H1: Service automation has a significant relationship with overall job satisfaction is accepted**

Objective 2 To explore whether the complexity of automated systems affects job satisfaction.

H2: The complexity of automated systems negatively impacts job satisfaction.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.949 ^a	.087	.082	.17233
a. Predictors: (Constant), Complexity Service Automation				

Interpretation the correlation between the complexity of service automation and the dependent variable is very strong (**R = 0.949**), the model only explains a modest portion of the variance in the dependent variable (**R² = 0.087**), suggesting that other factors may also contribute to the outcome.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.489	1	.489	16.479	.000 ^b
	Residual	5.138	173	.030		
	Total	5.627	174			
a. Dependent Variable: Overall Job Satisfaction						
b. Predictors: (Constant), Complexity Service Automation						

The regression model is statistically significant, as indicated by the **F-statistic (16.479)** and the **p-value (0.000)**. This suggests that **Complexity of Service Automation** significantly predicts the dependent variable, supporting the relevance of the independent variable in explaining variation in the outcome.

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.396	.212		16.022	.000
	Complexity Service Automation	.207	.051	.949	4.059	.000
a. Dependent Variable: Overall Job Satisfaction						

The coefficient for **Complexity of Service Automation** is positive and statistically significant ($p = 0.000$), meaning that as the complexity of service automation increases, overall job satisfaction also increases significantly. The strong standardized coefficient (**Beta = 0.949**) suggests that this relationship is very strong, and the **t-value (4.059)** further supports the significance of this relationship.

The regression equation that predicts **Overall Job Satisfaction** from the **Complexity of Service Automation** is:

Overall, Job Satisfaction = $3.396 + 0.207(\text{Complexity of Service Automation})$

Thus, based on above finding, **H2: The complexity of automated systems negatively impacts job satisfaction** is **rejected**.

SUGGESTIONS AND RECOMMENDATIONS

Given the strong positive relationship between service automation complexity and job satisfaction, organizations should invest in comprehensive training programs. This will help employees better understand and adapt to complex automated systems, thereby improving their job satisfaction. To minimize potential challenges associated with complexity, organizations should consider simplifying automated processes where possible. This can reduce the cognitive load on employees, leading to higher satisfaction levels. Implement systems to gather continuous feedback from employees regarding their experiences with service automation. This feedback can inform adjustments and improvements in automation processes.

CONCLUSION

According to the study's findings, employees' general job happiness and the complexity of service automation are significantly positively correlated. Contrary to the initial hypothesis that complexity negatively impacts job satisfaction, the analysis indicates that as employees engage with more complex automated systems, their levels of job satisfaction actually increase. This suggests that employees may find value in the challenges and opportunities presented by complex automation, potentially leading to a more enriched work experience.

The positive association can be attributed to several factors. First, employees who are well-trained and equipped with the necessary skills to navigate complex automated systems are likely to feel more competent and empowered in their roles. This sense of empowerment can enhance their overall job satisfaction, as they perceive themselves as capable contributors to the organization's success. Moreover, complex systems may offer employees increased efficiency and productivity, which can lead to a sense of accomplishment and fulfilment in their work.

Additionally, the study highlights the importance of effective implementation and support structures around automated systems. Organizations that invest in comprehensive training programs and foster an environment where employees can voice their concerns and experiences with automation are likely to see enhanced job satisfaction. This underscores the notion that the implementation of automated systems should not be a mere technological upgrade but rather a holistic change management process that considers employee perspectives and needs.

Furthermore, this research opens the door for organizations to rethink their approach to service automation. Instead of viewing complexity as a hurdle to employee satisfaction, it can be reframed as an opportunity for growth and development. By embracing complexity and supporting employees

through the transition, organizations can cultivate a workforce that is not only adaptable to change but also engaged and satisfied with their work.

REFERENCES

1. **Autor, D.H.** Why Are There Still So Many Jobs? The History and Future of Workplace Automation. *J. Econ. Perspex.* **2015**, 29, 3–30. [CrossRef]
2. **Berg, A.; Buffie, E.F.; Zanna, L.-F. (2018)** Should We Fear the Robot Revolution? (The Correct Answer Is Yes). *J. Monet. Econ.* 2018, 97, 117–148. [CrossRef]
3. **Berger, T.; Engzell, P.** Industrial Automation and Intergenerational Income Mobility in the United States. *Soc. Sci. Res.* 2022, 104, 102686. [CrossRef].
4. **Bhargava, A., Bester, M., & Bolton, L. (2021).** Employees' perceptions of the implementation of robotics, artificial intelligence, and automation (RAIA) on job satisfaction, job security, and employability. *Journal of Technology in Behavioural Science*, 6(1), 106–113.
5. **Braganza, A., Chen, W., Canhoto, A., & Sap, S. (2022).** Gigification, job engagement and satisfaction: the moderating role of AI enabled system automation in operations management. *Production planning & control*, 33(16), 1534–1547.
6. **Chen, F., & Li, R. (2024).** Improvement and Replacement: The Dual Impact of Automation on Employees' Job Satisfaction. *Systems*, 12(2), 46. <https://doi.org/10.3390/systems12020046>.
7. **Clark, A.** What Makes a Good Job? Job Quality and Job Satisfaction. IZA World Labor 2015. [CrossRef]
8. **Coupe, T.** Automation, Job Characteristics and Job Insecurity. *Int. J. Manpow.* 2019, 40, 1288–1304. [CrossRef]
9. **Estabrook, L., Bird, C., & Gilmore, F. L. (2014).** Job satisfaction: Does automation make a difference? In *Personnel Administration in an Automated Environment* (pp. 175–194). Routledge.
10. **Gihleb, R.; Giuntella, O.; Stella, L.; Wang, T.** Industrial Robots, Workers' Safety, and Health. *Labour Econ.* **2022**, 78, 102205. [CrossRef]
11. **Graetz, G.; Michaels, G.** Robots at Work. *Rev. Econ. Stat.* 2018, 100, 753–768. [CrossRef]
12. **Hinks, T.** Fear of Robots and Life Satisfaction. *Int. J. Soc. Robot.* 2021, 13, 327–340. [CrossRef]
13. **Liu, L. (2023).** Job quality and automation: Do more automatable occupations have less job satisfaction and health? *Journal of Industrial Relations*, 65(1), 72–87.
14. **Lopes, H.; Lagoa, S.; Calapez, T.** Work Autonomy, Work Pressure, and Job Satisfaction: An Analysis of European Union Countries. *Econ. Labour Relat. Rev.* **2014**, 25, 306–326. [CrossRef]

15. **Owusu-Ansah, C. M., Mprah, R. K., & Kumah, C. H. (2014).** The impact of library automation on the job satisfaction on of library staff. *European Journal of Business and Social Sciences*, 3(9), 100-113.
16. **Pichler, F.; Wallace, C.** What Are the Reasons for Differences in Job Satisfaction across Europe? Individual, Compositional, and Institutional Explanations. *Eur. Social. Rev.* **2009**, 25, 535–549. [CrossRef]
17. **Plastino, E.; Purdy, M.** Game Changing Value from Artificial Intelligence: Eight Strategies. *Strat. Leadersh.* **2018**, 46, 16–22. [CrossRef]
18. **Ranasinghe, N., & Wickramasinghe, P.** Impact of Ai Based Process Automation (Rpa) on Employee Job Satisfaction. *Impact of Ai Based Process Automation (Rpa) on Employee Job Satisfaction*.
19. **Raziq, A.; Maulabakhsh, R.** Impact of Working Environment on Job Satisfaction. *Procedia Econ. Finance.* 2015, 23, 717–725. [CrossRef]
20. **Schwabe, H., & Castellacci, F. (2020).** Automation, workers' skills and job satisfaction. *PLOS ONE*, 15(11), e0242929. <https://doi.org/10.1371/journal.pone.0242929>.
21. **Schwabe, H.; Castellacci, F.** Automation, Workers' Skills and Job Satisfaction. *PLoS ONE* 2020, 15, e0242929. [CrossRef] [PubMed]
22. **Sousa-Poza, A.; Sousa-Poza, A.A.** Well-Being at Work: A Cross-National Analysis of the Levels and Determinants of Job Satisfaction. *J. Socio-Econ.* **2000**, 29, 517–538. [CrossRef]
23. **Winkelhaus, S., Grosse, E. H., & Glock, C. H. (2022).** Job satisfaction: An explorative study on work characteristics changes of employees in Intralogistics 4.0. *Journal of Business Logistics*, 43(3), 343-367. <https://doi.org/10.1111/jbl.12296>

WEBLIOGRAPHY

- <https://www.researchgate.in>
- <https://link.springer.com>
- <https://papers.ssrn.com>