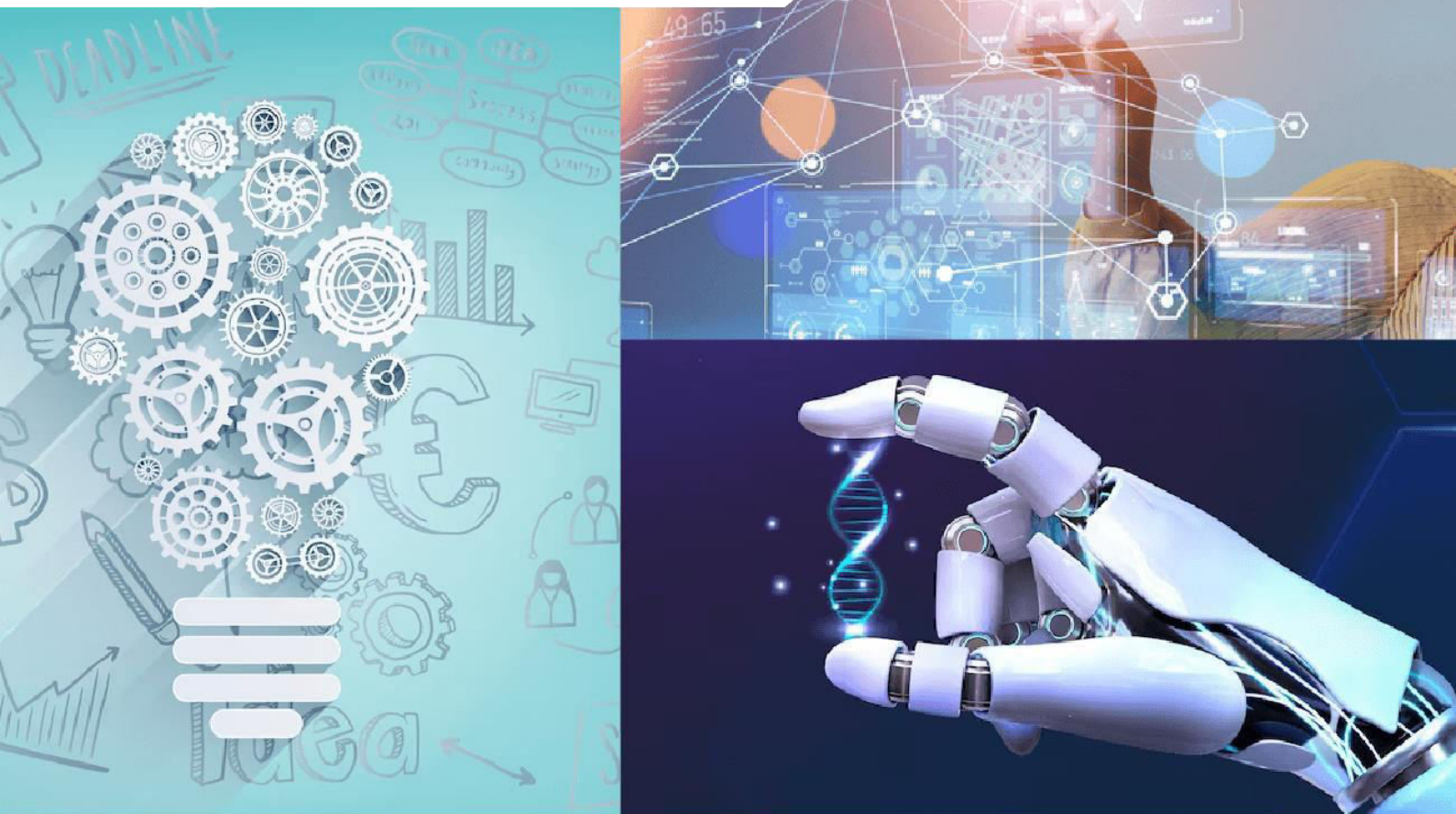




International Journal of Advanced Research in Education and Technology (IJARETY)

Volume 13, Issue 1, January - February 2026

Impact Factor: 8.152



INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



A Study on Effectiveness of Ai-Integrated Payroll Systems in Swiss way Overseas Pvt. Ltd., Chennai

Saranyaa M, Dr. DEEPA M

Final Year Student (Full time), Department of MBAPG & School of Management Studies, Sathyabama Institute of Science and Technology, Chennai, Tamil Nadu, India

Assistant Professor, School of Management Studies, Sathyabama Institute of Science and Technology, Chennai, Tamil Nadu, India

ABSTRACT: Payroll is linked to various meanings and is used interchangeably as an umbrella term to a set of individuals who work in an organization to showcase their incomes. Payroll management is an essential part of the work of any company and the introduction of artificial intelligence (AI) in payroll systems has revolutionized the manner in which companies approach the issue of employee compensation. AI-based payroll systems are more automated, accurate, and compliant with fewer human errors and complex calculations. The objective of the study is to analyse on effectiveness of AI-integrated payroll systems in Swissway Overseas Pvt.Ltd., Chennai. The sample of the study is 120. Descriptive research design and convenience sampling method has been used. The primary data has been utilized as questionnaire. The findings of the study have been reached with the help of simple percentage analysis, chi-square analysis and correlation statistical tools. It is established that educational qualification of the respondents and accuracy of payroll processing have significant relationship. There is positive relationship between experience of the respondents and processing efficiency. It is proposed that the company needs to enhance the user interface to ensure that the payroll information is readily available and easy to use. The company should continuously revise AI-based security processes to avoid unauthorized access to payroll information. It is concluded that it was found that AI-based automation reduced administrative burdens and increased the ability of the system to process large volumes of payroll-related data more effectively. The outcome of greater payroll processing efficiency is faster resolution of queries and general operational excellence.

KEYWORDS: Payroll systems, data security, payroll accuracy, payroll efficiency.

CHAPTER 1-

I. INTRODUCTION

Artificial Intelligence can be explained as a science as well as computation technologies which are largely different from what humans use in their bodies and brains for detecting, learning, reasoning and responding. The term was introduced by computer scientist John McCarthy in the year 1956, who describes artificial intelligence as the science and engineering of making intelligent machines. Artificial Intelligence is considered to be a subset of computer science that focuses on imitating or duplicating human intelligence into machines so that they perform activities which usually need human intelligence. Some of the functions performed by AI software include decision making, reasoning, and problem-solving skills. The artificial intelligence systems run on algorithms, employing approaches like machine learning, deep learning, and rules. Algorithms for machine learning supply data for the computer into the AI systems, applying statistics to allow AI systems to learn. By means of machine learning, AI systems become better at performing their assigned tasks, even if there is no explicit programming involved. Computer science defines research in Artificial Intelligence as the study of "intelligent agents". Any device that understands its surroundings and performs actions based on its perception to enhance its possibility of success in attaining its objectives". Another definition of Artificial Intelligence is "the capability of a system to interpret external information appropriately, learn from this information, and apply what has been learned to achieve certain objectives and tasks."

Primary objective

- To study on effectiveness of AI-integrated payroll systems in Swissway Overseas Private Limited, Chennai

Secondary objectives

- To evaluate the accuracy of payroll processing in the company
- To analyze the user experience & ease of use of AI-integrated payroll systems in the company
- To examine the processing efficiency of the AI-integrated payroll systems in the company

CHAPTER 2 –**II. REVIEW OF LITERATURE**

Dr. R.S Anantharajan, Gayathri P (2024), This study examines the substantial impact that artificial intelligence (AI) has on payroll functions in the field of human resources (HR), with a focus on the comparison of notable companies like Wipro, TCS, Infosys, and Zoho. This paper also investigates the methods through which AI makes the process efficient, reduces errors, and eliminates the need for manual intervention, thus leading to savings. It will highlight some of the possible problems that may arise from using AI in HR, such as data protection issues and employment displacement, along with the preparedness of HR personnel to use AI technology. With the use of the literature review approach coupled with the analysis of secondary sources, this research attempts to explore the pros and cons of implementing AI within the context of payroll management. It is clear from the findings that while there are many benefits in adopting AI technology, it is necessary to develop certain strategies, such as staff training and ensuring high security, in order to optimize its performance.

Parasa, Sasi Kiran(2023), The use of Artificial Intelligence in payroll has led to improved efficiency, accuracy, and compliance of the process. This paper examines the influence of Artificial Intelligence in improving the effectiveness and efficiency of payroll system. Using extensive research and examples, this study examines the influence of using AI in payroll through automation, reduced errors, real time processing, and compliance with regulations. The research identifies the impact of artificial intelligence in transforming the process of payroll in organizations. In addition, the paper discusses the issues facing organizations as they integrate AI in their payroll system and the measures necessary for improving AI in payroll.

Korrapati, Rakesh(2023), The current paper examines the revolutionary effect that AI has had on payroll management by highlighting its effectiveness in making the process more efficient, accurate, and compliant. The research uses an extensive examination of relevant literature and case studies in order to assess the potential of AI in payroll management. Moreover, the study will also highlight the challenges that arise from the implementation of AI in the context of payroll management, including issues of data privacy, compatibility, and professional development.

CHAPTER 3-**III. RESEARCH METHODOLOGY**

In this study, descriptive research was used. descriptive research as a purposive process of gathering, analyzing, classifying, and tabulating data about prevailing conditions, practices, processes, trends, and cause-effect relationships and then making adequate and accurate interpretation about such data with or without or sometimes. Research design is a plan, a roadmap and blueprint strategy of investigation conceived so as to obtain answers to research questions. In this study, descriptive research design is used. The study basically uses primary and secondary data. The study depends mainly on the primary data such as questionnaires and secondary data namely the text books, journals, newspapers, magazines and internet. Convenience sampling is used in this study. A convenience sample simply includes the individuals who happen to be most accessible to the researcher. In this study, data was collected from 120 employees of Swissway Overseas Private Limited, Chennai. So, sample size is 120. The following are the tools used by the researcher to interpret the data and to provide conclusion for the study : Simple Percentage Analysis, Correlation Analysis and Chi-Square Analysis.

CHAPTER 4-**IV. ANALYSIS AND INTERPRETATION****Table No. 1 ACCURACY OF PAYROLL PROCESSING**

Statements	Excellent	Good	Average	Bad	Poor	Total
------------	-----------	------	---------	-----	------	-------

The payroll system calculates salaries and deductions without errors	39 (32.5%)	41 (34.2%)	18 (15.0%)	12 (10.0%)	10 (8.3%)	120 (100%)
Overtime and bonuses are accurately reflected in payroll processing	37 (30.8%)	43 (35.8%)	19 (15.8%)	12 (10.0%)	9 (7.6%)	120 (100%)
Salary disbursements occur without any miscalculations or delays	38 (31.7%)	42 (35.0%)	20 (16.7%)	11 (9.1%)	9 (7.5%)	120 (100%)
The payroll system effectively reduces manual intervention errors	36 (30.0%)	44 (36.7%)	18 (15.0%)	13 (10.8%)	9 (7.5%)	120 (100%)
Payslips generated by the system accurately reflect earnings and deductions	37 (30.8%)	43 (35.8%)	19 (15.8%)	12 (10.0%)	9 (7.6%)	120 (100%)
Source: Primary data						

INTERPRETATION

32.5% of respondents rated that the payroll system calculates salaries and deductions without errors as excellent and 34.2% as good, while 15.0% rated it average, 10.0% bad, and 8.3% poor. 30.8% of respondents rated overtime and bonuses accuracy as excellent and 35.8% as good, while 15.8% rated it average, 10.0% bad, and 7.6% poor. 31.7% of respondents rated salary disbursement without miscalculations or delays as excellent and 35.0% as good, while 16.7% rated it average, 9.1% bad, and 7.5% poor. 30.0% of respondents rated reduction of manual intervention errors as excellent and 36.7% as good, while 15.0% rated it average, 10.8% bad, and 7.5% poor. 30.8% of respondents rated payslip accuracy as excellent and 35.8% as good, while 15.8% rated it average, 10.0% bad, and 7.6% poor.

Table No. 2 USER EXPERIENCE & EASE OF USE

Statements	Excellent	Good	Average	Bad	Poor	Total
System functionalities are intuitive and require minimal training	38 (31.7%)	42 (35.0%)	18 (15.0%)	12 (10.0%)	10 (8.3%)	120 (100%)
The system provides clear and simple instructions for use	37 (30.8%)	43 (35.8%)	19 (15.8%)	12 (10.0%)	9 (7.6%)	120 (100%)
Troubleshooting payroll-related issues within the system is straightforward	36 (30.0%)	44 (36.7%)	18 (15.0%)	13 (10.8%)	9 (7.5%)	120 (100%)
The system responds quickly and smoothly without technical glitches	35 (29.2%)	42 (35.0%)	20 (16.7%)	13 (10.8%)	10 (8.3%)	120 (100%)
Accessing payroll information is convenient and user-friendly	38 (31.7%)	43 (35.8%)	18 (15.0%)	12 (10.0%)	9 (7.5%)	120 (100%)

INTERPRETATION

31.7% of respondents rated system functionalities as intuitive and requiring minimal training as excellent and 35.0% as good, while 15.0% rated it average, 10.0% bad, and 8.3% poor. 30.8% of respondents rated clarity of system instructions as excellent and 35.8% as good, while 15.8% rated it average, 10.0% bad, and 7.6% poor. 30.0% of respondents rated troubleshooting payroll-related issues as straightforward with 36.7% rating it good, while 15.0% rated it average, 10.8% bad, and 7.5% poor. 29.2% of respondents rated system responsiveness without glitches as excellent and 35.0% as good, while 16.7% rated it average, 10.8% bad, and 8.3% poor. 31.7% of respondents rated accessing payroll information as convenient and user-friendly as excellent and 35.8% as good, while 15.0% rated it average, 10.0% bad, and 7.5% poor.

Table No. 3 PROCESSING EFFICIENCY

Statements	Excellent	Good	Average	Bad	Poor	Total
Salary disbursements occur on time without delays	38 (31.7%)	42 (35.0%)	20 (16.7%)	12 (10.0%)	8 (6.6%)	120 (100%)
The system automates payroll tasks, reducing manual workload	36 (30.0%)	44 (36.7%)	18 (15.0%)	14 (11.7%)	8 (6.6%)	120 (100%)
The system efficiently handles large volumes of payroll data	37 (30.8%)	43 (35.8%)	19 (15.8%)	13 (10.8%)	8 (6.8%)	120 (100%)
The system reduces administrative burdens associated with payroll processing	35 (29.2%)	42 (35.0%)	20 (16.7%)	14 (11.7%)	9 (7.5%)	120 (100%)
Payroll-related queries are resolved faster due to AI automation	36 (30.0%)	44 (36.7%)	18 (15.0%)	13 (10.8%)	9 (7.5%)	120 (100%)
Source: Primary data						

INTERPRETATION

31.7% of respondents rated salary disbursements occur on time without delays as excellent and 35.0% as good, while 16.7% rated it average, 10.0% bad, and 6.6% poor. 30.0% of respondents rated automation of payroll tasks as excellent and 36.7% as good, while 15.0% rated it average, 11.7% bad, and 6.6% poor. 30.8% of respondents rated handling of large volumes of payroll data as excellent and 35.8% as good, while 15.8% rated it average, 10.8% bad, and 6.8% poor. 29.2% of respondents rated reduction of administrative burdens as excellent and 35.0% as good, while 16.7% rated it average, 11.7% bad, and 7.5% poor. 30.0% of respondents rated faster resolution of payroll-related queries through AI automation as excellent and 36.7% as good, while 15.0% rated it average, 10.8% bad, and 7.5% poor.

CORRELATION ANALYSIS: Relation between Accuracy of Payroll Processing and Processing Efficiency
HYPOTHESIS TESTING

Null hypothesis (H0): There is no significant relationship between accuracy of payroll processing and processing efficiency.

Alternative hypothesis (H1): There is a significant relationship between accuracy of payroll processing and processing efficiency.

	ACCURACY OF PAYROLL PROCESSING	PROCESSING EFFICIENCY
ACCURACY OF PAYROLL PROCESSING	Pearson Correlation	1
	Sig. (2-tailed)	

	ACCURACY OF PAYROLL PROCESSING	PROCESSING EFFICIENCY
	N	120
PROCESSING EFFICIENCY	Pearson Correlation	.412**
	Sig. (2-tailed)	.000
	N	120

INTERPRETATION

The above table indicates that the coefficient of correlation between accuracy of payroll processing and processing efficiency is 0.412. Since the value is less than 1 and greater than 0, it shows a moderate positive relationship between the two variables. This implies that as the accuracy of payroll processing increases, the processing efficiency also tends to improve. The significance value (0.000) is less than 0.05, indicating that the relationship is statistically significant. Hence, the null hypothesis is rejected and the alternative hypothesis is accepted.

CHI-SQUARE ANALYSIS: USER EXPERIENCE & EASE OF USE AND PROCESSING EFFICIENCY. HYPOTHESIS TESTING

Null hypothesis (H0): There is no significant relationship between user experience & ease of use and processing efficiency.

Alternative hypothesis (H1): There is a significant relationship between user experience & ease of use and processing efficiency.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	248.614a	48	.000
Likelihood Ratio	210.275	48	.000
Linear-by-Linear Association	68.492	1	.000
N of Valid Cases	120		

a. 60 cells (88.9%) have expected count less than 5. The minimum expected count is .18.

INTERPRETATION

As per the above table, it is inferred that the P value is .000, which is less than the 5% (0.05) level of significance. The minimum expected count is .18. Thus, the null hypothesis is rejected and it is found that there is a significant relationship between user experience & ease of use and processing efficiency.

CHAPTER 5**V. FINDINGS**

- 32.5% of respondents rated that the payroll system calculates salaries and deductions without errors as excellent and 34.2% as good
- 31.7% of respondents rated system functionalities as intuitive and requiring minimal training as excellent and 35.0% as good,
- 31.7% of respondents rated salary disbursements occur on time without delays as excellent and 35.0% as good,
- The above table indicates that the coefficient of correlation between accuracy of payroll processing and processing efficiency is 0.412. This implies that as the accuracy of payroll processing increases, the processing efficiency also tends to improve.
- It is found that there is a significant relationship between user experience & ease of use and processing efficiency.

CHAPTER 6**VI. CONCLUSION SUGGESTIONS****Conclusion**

It can be concluded that with the integration of artificial intelligence, the management of payroll will become more accurate, efficient, and secure. Since the system automates the calculation, deductions, and payments of salaries, there will be fewer errors and delays since there won't be a need for human interaction. In addition, because of the troubleshooting abilities of the system and its ease of operation, there will be no need for any further training or interruptions in the operations of the business. In addition, by applying the latest security protocols, there will be increased confidentiality and adherence to industry standards. Additionally, it has been noted that artificial intelligence (AI) automation reduces administrative burdens and enhances the system's ability to effectively process large volumes of payroll data. Speed in query processing and superior operation effectiveness are the outcomes of effective payroll processing. Companies can enhance employees' satisfaction and provide secure and convenient transactions through the use of AI for payroll processing. In the future, efficient AI-based payroll system operations would require continuous improvements in the system and compliance with evolving regulations.

Suggestions

- For ensuring accurate calculation of salaries, the organization needs to conduct accuracy testing of the payroll system.
- Before conducting payroll processing, the organization needs to validate its overtime and bonus amounts.
- For efficient processing of the payroll, the organization needs to optimize its payroll processing activities to avoid any sort of error and delay in paying out salaries.
- To decrease chances of any mistake due to manual intervention, the organization must enhance its AI checks.
- The organization should ensure full transparency of all incomes and deductions on pay stubs.
- To keep training requirements to a minimum, the organization should design a system with an intuitive interface.
- For ease of functioning, the organization must provide instructions to its users in a clear and concise manner.
- For troubleshooting purposes, the company will have to use artificial intelligence systems.
- For ensuring smooth operation without errors, the company needs to test the performance of the system regularly.
- For making the payroll data easily accessible, the company will need to enhance its user interface.
- The use of AI technology is essential for ensuring the security of payrolls from any form of illegal access.
- The company should strictly adhere to the rules and laws regarding industry regulation.

REFERENCES

1. Aidi Ahmi (2018), "Payroll system: A bibliometric analysis of the literature", Elsevier, 2016(1):020124, DOI:10.1063/1.5055526, Conference: proceedings of the 3rd international conference on applied science and technology (icast'18).
2. Fariza Hanim Rusly, Aidi Ahmi (2019), "Global Perspective on Payroll System Patent and Research: A Bibliometric Performance", International Journal of Recent Technology and Engineering (IJRTE), ISSN: 2277-3878, Volume-8, Issue-2S2, July 2019.
3. Y Soegoto (2019), "Designing Payroll Information System: Case Study on CV. Bandung ID card", IOP Conf. Series: Materials Science and Engineering 662 (2019), 022125 IOP Publishing doi:10.1088/1757-899X/662/2/022125.
4. Yang Agita Rindri, Ridi Ferdiana (2019), "Developer Payroll Approaches for Startup Environment Based on Agile Project Management", Science Direct, Procedia Computer Science 161 (2019) 66–73.
5. Itsney Nur Hikmah (2020), "Employee Payroll Information System on Company Web-Based Consultant Engineering Services", International Journal of Computer and Information System (IJCIS), Vol. 01, Issue 02, August 2020.
6. Yunusa Acho (2021), "Impact of Integrated Personnel Payroll Information System on Employees Satisfaction in Kogi State", International Journal of Public Administration and Management Research (IJPAMR), Vol. 6, No. 6, August, 2021.
7. Holmes Walter (2021). Optimizing Payroll and Compensation with AI: Integrating HRM and Finance Information Systems for Improved Efficiency. Journal of Data Management, 22(3), 102-112.
8. Parasa, Sasi Kiran(2023), Comprehensive Understanding of Impact of AI on Payroll Management. Available at SSRN: <https://ssrn.com/abstract=5102803>
9. Korrapati, Rakesh(2023), AI-Driven Transformation of Payroll Management: Enhancing Efficiency, Accuracy, and Compliance. Available at SSRN: <https://ssrn.com/abstract=5131030> or <http://dx.doi.org/10.2139/ssrn.5131030>

International Journal of Advanced Research in Education and Technology

ISSN: 2394-2975

Impact Factor: 8.152