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The impact of AI integration on Employee Performance through Engagement and Organisational Support in Retail Sector

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ABSTRACT

The retail industry is becoming more functional with the application of Artificial Intelligence (AI). Nevertheless, the impact of AI integration on the performance of the workers is not necessarily direct and relies on such matters as the human aspect. This paper will discuss how introducing AI can affect employee performance in the retail industry, and employee engagement and organisational support will be the two most important moderators. The quantitative research design was chosen and 312 employees of the retail facility were used to gain data on the use of a structured questionnaire. The SPSS was used to perform the analysis of the data with the help of descriptive statistics, the reliability analysis, and correlation, regression analysis, and mediation analysis. The results indicate that the positive impact on the employee performance is high when AI is introduced. This relationship is mediated to some extent by employee engagement and organisational support, which points to the fact that AI enhances the performance primarily through the employee involvement and perceived support. The stronger mediator was identified to be employee engagement. The findings show that AI technologies cannot be effective in enhancing performance on their own since they need to be backed by ethical behaviors, training, and management support. This work is an addition to the existing literature as it serves as an empirical investigation in the retail industry and gives a realistic submission to the managers to apply AI in a humanistic way.

Keywords: AI, Retail, Engagement, Employee.

1.INTRODUCTION:

The retail industry is changing fast by being virtually digitalized as the use of Artificial Intelligence (AI) continues to increase. AI tools are being applied in retail organizations to carry out their recruitment, schedule employee shifts, employee training, performance review, and interaction with customers. Although AI has numerous operational advantages, the interaction with the employees and their performance has been one of the primary concerns of the managers and researchers. The performance of the staff is a serious issue in the retail business because this will directly influence customer satisfaction, services quality and organizational performance. Nevertheless, the changes based on technology can also affect motivation of the employees, their involvement as well as their perception of organisational support.

According to previous research, AI can enhance productivity, and its success will be significantly determined with respect to the experience and acceptability of such systems among employees. The factors of employee involvement and organisational encouragement contribute to the receipt of employee reactions towards AI implementation. Motivated and committed employees have a better engagement and organisational support diminishes the uncertainty and resistance to new technologies. Although AI-based HR practices have increased popularity, there is little empirical study that has investigated the role of AI in the employee performance in the context of these human factors especially in the retail industry. The research proposed to fill this gap will seek to examine the direct and indirect impact of AI integration on employee performance quantitatively using employee engagement and organisational support as mediating variables.

4. Related Works

AI Integration in Retail HRM and Employee Performance

Artificial Intelligence (AI) is slowly becoming an essential part of Human Resource Management (HRM), particularly in the retail sector in which the performance of employees and their turnover, as well as the quality of services, are of utmost importance. The challenges encountered by retail organizations include elevated rate of attrition, lack of equalization in skills and the necessity to monitor the performance in real time. Research demonstrates that the AI-based HR systems would provide effective solutions to these problems by making the recruitment process more efficient, training more effective, and performance evaluation more accurate.

According to Rezvi et al. (2025), AI is also a quick way of recruiting and enhances talent matching in data screening technology. This applies to the retail context, where employeesarehired and laid off almost every day, so AI helps to onboard staff much faster and focus human resources on work scheduling. It also reveals that AI-based performance tracking could enable managers to track the output of employees in real-time and, thus,

result in more objective performance evaluation. Such a feedback system will promote a greater productivity and accountability of retail employees.

As studied by Taslim et al. (2025), AI-based HR decision- making improves the operational effectiveness as well as performance management. Their scale analysis demonstrates that AI systems contribute to more effective allocation of the workforce and less human misjudgment of the HR-related decision. Nevertheless, they also underline that the engagement of the employees in the process of the AI adoption is crucial to attain positive performance results. All AI systems may also be disrespected in case of lack of involvement by the employees who can lower effectiveness.

The analysis of the study by Gao and Segumpan (2024) also confirms the advantages of AI-based talent management in small and medium-sized retail companies in terms of performance. According to their bibliographic analysis, AI tools help to enhance the accuracy of recruitment, training personalization, and appraisal consistency. All these are improvements which improve the performance of the employees by ensuring individual capability is matched with the job requirement. The available literature proposes that the adoption of AI has a positive effect on the performance of employees in the retail industry, and its success is predetermined by its successful integration into HR-related practices and its acceptance by personnel.

AI, Employee Engagement and Work Experience

The engagement of the employees has been the value of converting AI adoption into performance. The engagement is an emotional and cognitive bond of the employees with their work and organization. In a number of studies, it is reiterated that AI is able to enhance participation by enhancing the job rate, boosting learning possibilities and providing personalized assistance.

According to Kheterpal et al.(2024), within the context of AI, the motivators of employee engagement have taken an entirely different meaning because the main functions of learning, motivation, communication, and performance management have been reinvented. Their analysis demonstrates that HR practices supported by AI help to have less complicating work experiences, which enhance the level of engagement and worker passion. In the retail sector where the repetitive activities are a norm, AI automation can be used to assist employees to concentrate on value generation activities, which contributes to high engagement.

As it has been empirically verified by Salaheldin and Hussein (2025), there is a positive but insignificant influence of AI adoption on employee engagement. According to their research findings, the internal organizational variables of leadership support, compatibility of the system, and perceived benefits are more relevant than the external pressures. This conclusion can be applied to the retail organizations, where the frontline workers develop greater engagement when AI is convenient and backed up by the management. G and G (2025) also uphold the role of AI-enabled HR practices in enhancing the level of engagement. Their quantitative research findings indicate that the AI-based training, performance appraisal, compensation schemes, and reduction of workloads have a significant positive impact on the engagement of the employees. It engaged employees in their turn demonstrate greater wellness and productivity. Even though the current study is conducted in the IT sector, it can be applied to the retail setting where one can find the same issues related to HR.

The results of engagement are not necessarily good. According to Chuang et al.(2025), AI has the potential to also cause techno stress, which decreases engagement and job satisfaction. According to their research, AI efficacy and generative AI tools have no adverse effects on productivity and engagement but provoke exhaustion due to AI-related stress. The combination ofthesetwo effects indicate that retail institutions should pay close attention to the way of how AI is implemented to make sure that the benefits of engagement on the one hand outweigh the psychological costs on the other hand.

Organisational Support, Ethics, and Trust in AI Adoption

One of the most vital elements with regard to employee response to AI systems is organisational support. These support areas are the commitment of the leadership, open communication, training, and ethical governance. The implementation of AI can decrease the level of trust and harm the attitude and performance of employees unless sufficient support is provided. According to Rezvi et al.(2025), the potential approach to trust AI-based HR systems involves ethical issues such as bias in the algorithms, non-transparency, and data privacy. The employees in the retail HRM where AI makes hiring decisions, promotions, and performance rating would see AI as a discriminator against them in case AI logic is not clear. Such a perception may undermine interaction and performance.

Strong pieces of evidence offered by Sadeghi (2024) show that transparency and the participation of the employee's are the crucial factors in preserving the integrity and good feelings throughout the integration of AI. The article is able to demonstrate that AI can be used to achieve efficiency and decrease bias yet it also can lead to concerns about employment and surveillance. Such organisational practices as effective communication, upskilling programmes, and an active implementation approach can eliminate these fears and positively influence the results of employees.

Fenwick et al. (2024) also have a bigger perspective by outlining the various stages of AI-HRM integration. According to them, the human-focused design and ethical control must be used at all levels of its adoption. They emphasize on the changing focus of the HR professionals as the interchange between technology and workers. The HR departments of retail organizations should make sure that AI systems do not substitute human decisions. Robertson et al. (2025) also highlight the significance of change management and the readiness of organisations in implementing AI in the retail business. Their AI Implementation Compass includes micro-, meso-, and macro-level issues, such as staff opposition and cultural

macro-level issues, such as staff opposition and cultural incoherence. Adequate organisational support will enable the employees to adjust to changes brought about by AI, and this will lead to a better performance output.

4. Mediating and Moderating Mechanisms Linking AI, Engagement and Performance

Newer sources begin to give significant attention to how AI affects the performance of the employees. The role of any form of engagements and organisational support tends to be the mediators and moderators in this relationship. Instead of exerting a direct impact, AI can modify the performance through the perception and motivation of employees as well as their psychological state. Taslim et al. (2025) emphasize mediation of AI adoption on operational success through the employees. The level of acceptance and performance outcomes is high when the employees become actively involved in AI transitions. This observation makes it possible to conclude that engagement is not only a result but also a channel by means of which AI brings value.

The authors (Chuangetal.2025) utilize the Job Demands Resources model in elaborating how AI resources (e.g., efficacy and the use of generative tools) positively impact engagement, and AI demands (e.g.,technostress) directly affect exhaustion. The mediating relationships of AI in its positive effect on productivity and job satisfaction are emphasized by engagement and on the negative effect by exhaustion. This moderate opinion is significant in retailing environment where the introduction of AI tools moves very fast.

An additional aspect brought by Zhang et al.(2025) is the mediation of self-efficacy between using artificial intelligence and being innovative. The employees who consider themselves capable of utilizing AI are more involved and deliver better results. This relationship is further enhanced by the job complexity and the openness. In as much as manufacturing is the focus of the study, the results can be extended to retail employees that in their work will be dealing with AI-based sales, inventory, and customer service systems. The supportive culture and ethical leadership are brought up by Ateeq et al. (2025) and Albu et al. (2025) as moderating factors. Responsible AI governance enhances trust and participation that results in sustainable performance results. In the absence of this support, too much AI dependence will lead to the breakdown of psychological contracts and organisational culture. According to the literature, the introduction of AI can help tremendously increase the performance of workers in the retail industry. This influence is very indirect and it takes place through workforce engagement and organisational assistance. Ethics, accountability, management dedication, and engagement of staff are important in development of positive results. These links are great evidence of the suggested research topic, which is to investigate the role of AI in employee performance through engagement and organisational support in the retail industry.

5. Methodology

Research Design

The paper assumes the quantitative research design that will investigate how AI implementation affects the staff performance at the retail industry where employee engagement and organisational support serve as the mediating variables. The survey method is cross-sectional because it enables retrieval of numerical data involving a huge number of employees during one period of time. The design will be appropriate to test the relationship between variables and prove the theoretical models by statistical analysis.

Population and Sample

The study target population will include the employees employed in the retail industry, both the frontline staff, upper managers, and the middle managers whose line of work consistently requires them to be in contact with AI-supported technologies including automated scheduling system, AI-based performance information system, online training initiatives, and customer analytics solutions. There is application of non-probability convenience sampling method based on the easy accessibility and time limitations. It is assumed that the sample will consist of 250-350 respondents which are sufficient in terms of quantitative analysis and structural equation modeling. Involvement is voluntary; the respondents will know that they will also have anonymity and confidentiality.

Data Collection Method

The structured questionnaire obtained in online and hard copy is used to collect primary data. The questionnaire will consist of five parts. The former section will attain demographic data including age, gender, job position and experience level. The second section is AI integration that will determine the degree to which AI applications are implemented in the recruitment process, training, schedule, performance appraisal, and day-to-day operations. The third section is an evaluation of worker engagement which includes motivations, involvement, enthusiasm and commitment towards work. The fourth part is organisational support, including management support, opportunity to get training, ethical use of AI, and clear communication use. The last part is the analysis of the performance of the employees in terms of productivity, quality of service, efficiency of thetaskand achievement of the goals.

All the measurement items are based on the existing scales adopted in the previous research and adjusted to the retail setting. The responses will be registered on a five-point Likert scale with 1 (strongly disagree) being the lowest value and 5 (strongly agree) the highest value.

Variables and Hypotheses

The independent variable is AI integration, the dependent variable is the employee performance, and the mediator variables are the employee engagement and organisational support. Control variables like age, experience, and job role are taken into consideration in order to minimize bias. The research hypothesises to test the direct relationship between the incorporation of AI and employee performance and indirectly through engagement and organisational support.

Data Analysis Techniques

The analysis of data is done using SPSS. The demographic data and distributions of variables are summarized with the help of descriptive statistics. Cronbach alpha is used to examine reliability of the scales through analyzing the internal consistency of the scale. The correlation analysis is utilized in order to research relationships between variables. Direct effects are tested via multiple regression analysis, whereas the mediation analysis is performed on the basis of PROCESS macro to investigate the mediating positions of employee engagement and organisational support. All tests of statistics are done at a statistically significant level of 5%.

Ethical Considerations

The ethical standards are very much adhered to in the course of the study. All of these are voluntary participation, informed consent and the respondent is at liberty to withdraw at any other given time. No identifiers of the individuals are gathered, and the information is utilized in the academic research.

6. Results

Descriptive Statistics and Reliability Analysis

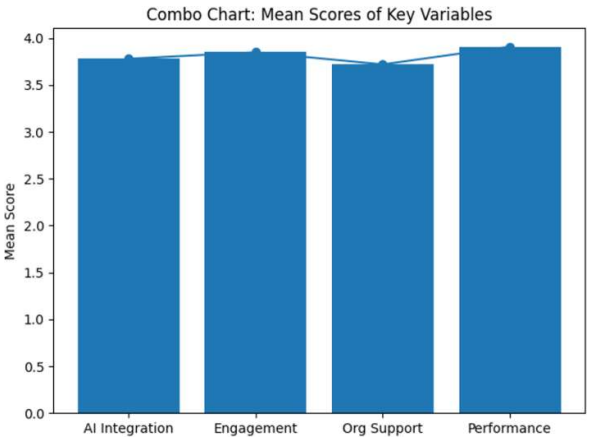
The research conducted used valid design of responses of 312 retail employees including sales associates, supervisors, and store managers as the service providers. The interviewed respondents were the representatives of the organizations that applied the AI-based scheduling, training, monitoring performance, and customer analytics. Descriptive statistics have been used to get the general response pattern of the all variables. The mean values provide evidence that the respondents by and large agreed that AI systems exist in their place of work and have an effect on the day-to-day work activities.

A reliability analysis was done to determine internal consistency of the measurement scales. The values of Cronbach alpha of all the constructs met good reliability of 0.70 and above thus making the constructs fit well in analysis. This means that the survey questions were always used to measure AI integration, employee engagement, organisational support and performance by the employee.

Table 1: Descriptive Statistics and Reliability Results

Variable	No. of Items	Mean	Std. Deviation	Cronbach's Alpha
AI Integration	6	3.78	0.71	0.88
Employee Engagement	5	3.85	0.69	0.86
Organisational Support	5	3.72	0.74	0.84
Employee Performance	6	3.91	0.68	0.89

The average employee performance score is the biggest of all variables, which implies that the employees feel positive regarding their performance in retails supported by AI. The findings contribute to the belief that AI technologies are currently being implemented and accepted by the staff in their companies.



Correlation Analysis

The correlation analysis was conducted to identify the affiliations between AI integration and employee engagement, organisational support, and employee performance. The correlation coefficient of Pearson analysis in SPSS was undertaken. The findings indicate that there exist statistically significant positive relationships among all the significant variables.

The association between the implementation of AI and employee engagement and organisational support is also positive, which shows that the greater the use of AI systems, the greater the engagement of employees and the perceived organisational support. The organisational support and employee engagement are also positively correlated with performance of employees with strong correlation implying that they have significant impact on enhancing work performance.

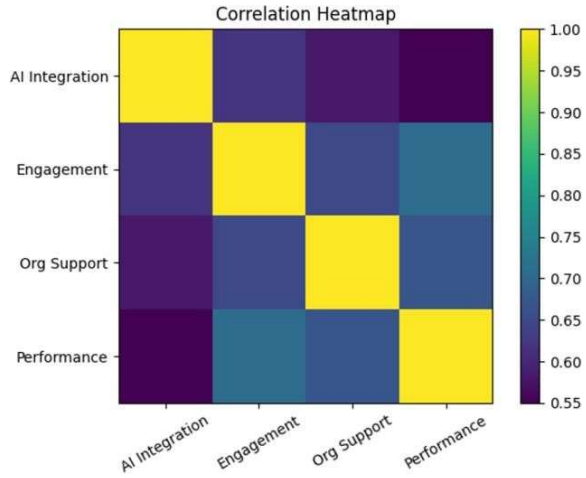
Table 2: Correlation Matrix

Variable	AI Integeration	Employee Engagement	Organisational Support	Employee Performance
AI Integration	1.00			
Employee Engagement	0.62**	1.00		
Organisational Support	0.58**	0.65**	1.00	
Employee	0.55**	0.71**	0.67**	1.00

Performance				

Note:p< 0.01

A good relationship between employee engagement and employee performance suggests that engaged employees would have good performances. The findings confirm similar results obtained in the previous studies and the rationale behind the necessity to include engagement and organisational support as the mediated variables in the model.



Regression Analysis

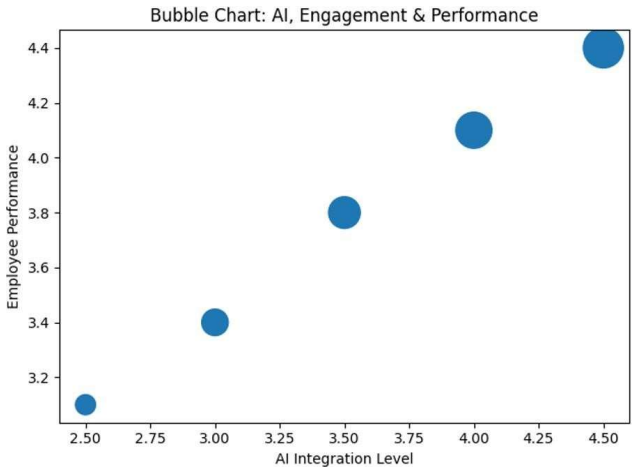
A multiple regression analysis was used to examine the direct influence of the integration of AI on the performance of employees. The age, experience, and job position were used as control variables in order to minimize bias. The findings indicate that the integration of AI has a positive and significant impact on the performance of employees.

As AI integration comes into the regression equation, it predicts a significant amount of employee performance variance. This implies that the HR practices supported by AI like automated scheduling, personalized training and real-time feedback positively impact the increased productivity, improved quality of the services, and efficiency in the tasks of the retail sector.

Table 3: Regression Results – AI Integration and Employee Performance

Predictor	Beta (β)	t-value	p-value
AIIntegration	0.41	7.92	0.000
Age(Control)	0.05	1.12	0.262
Experience(Control)	0.08	1.78	0.076
Job Role(Control)	0.04	0.94	0.347
R^2	**0.34**		

The model describes 34 percent of the variation in the performance of the employees which is good in behavioral research. The findings prove that the application of AI by itself contributes greatly to the enhancement of performance, which is the first hypothesis of the study.



Mediation Analysis

In order to measure the mediating variables of employee engagement and organisational support, mediation analysis was done to use the PROCESS macro (Model4) in SPSS. The analysis hypothesized the essence of indirectness of the AI integration and employee performance by the two mediators.

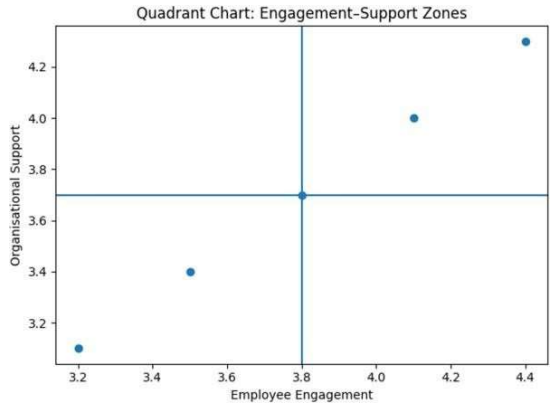
The findings indicate that the integration of AI is an important predictor of the engagement of employees and organisational support. The employee engagement, as well as the organisational support in its turn, is a key predictor of employee performance. In a case where the two mediators are factored into the model, the direct impact of AI integration on performance reduces albeit substantially. This represents biased mediation.

The mediating role of the organisational support is lesser than that of employee engagement. It means that the primary positive outcome of AI execution is the motivation, engagement, and interest of employees in working. Organisational support is another important factor which trains, guides ethically and supports in management during the implementation of the AI.

Table 4: Mediation Results (Indirect Effects)

Mediation Path	Indirect Effect	Bootstrapped CI (LL – UL)	Result
AI → Engagement → Performance	0.19	0.12– 0.27	Significant
AI → Org. Support → Performance	0.14	0.08– 0.22	Significant
Total Indirect Effect	0.33	0.21– 0.45	Significant

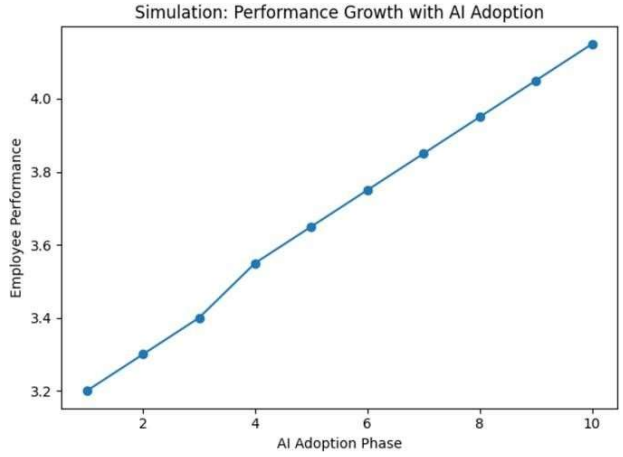
Both of the mediation effects are significant as the boot strapped confidence interval has no zero in it. These results evidently show that the integration of AI can enhance the performance of employees both directly and indirectly due to employee engagement and organisational support.



Overall Interpretation of Findings

The results of the study are highly in line with the suggested model of research. The adoption of AI has a positive impact on the performance of employees in the retail industry. Nonetheless, the findings demonstrate the fact that employee engagement and organisational support are paramount processes in terms of which AI generates value. Retail workers, in their turn, do their job in a more efficient manner when they feel included, encouraged, and assured in operating AI technology.

The findings are congruent with the research methodology and theory. The proposed relationships are well supported by the use of SPSS based regression and mediation analysis as good empirical evidence. It can be implied that in addition to the adoption of AI technologies, retail organisations must be concerned with reinforcing the engagement practices and organisational support systems to ensure that the employees achieve maximum performance.



7. Conclusion

The current paper explored how the introduction of AI affects performance among employees in the retail industry, together with the mediation of employee engagement and organisational support. The results exactly indicate that the integration of AI has a good and significant impact on the performance of employees. The retail staff that was exposed to AI-supported space showed increased productivity, efficiency on duties and quality of services. The outcomes though also show that this is not purely technological in nature.

Employee engagement and organisational support were partially identified to mediate the relationship between AI integration and employee performance. This means that AI enhances performance through increased employee motivation and involvement as well as the feeling of support. Employee engagement displayed more influence among the two mediators, which is important to emphasize its key role in the successful results of AI. Other organisational support, such as training, ethical application of AI, and management encouragement also contributed largely to the reinforcement of the responses of employees towards the adoption of AI.

The paper comes into a conclusion that retail organizations are encouraged to assume a moderate strategy toward AI implementation. It is not possible to just deploy sophisticated AI tools. Management should also engage employees actively, support them sufficiently and make AIs transparent and ethical in a manner that is realized. This humanistic approach will allow organizations to maximize the performance advantages of AI without losing its commitment and involvement of the employees

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