A Structural Path Analysis of Employee Perceptions on Artificial Intelligence Integration at Work

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Abstract

Artificial Intelligence (AI) technologies are becoming more integrated into organizational systems across the Philippines. This study is grounded in the idea that to make AI work effectively in the workplace, we must first understand how ready organizations are and how employees perceive the use of AI. They used a quantitative research design and applied multivariate analysis to examine the structural relationships between key factors influencing AI adoption. Specifically, we examined how organizational support, AI-enabled collaboration, employee awareness, and workplace productivity interact. The data came from various sectors—education, government, BPO, banking and finance, manufacturing, and others—capturing a broad view of current workplace dynamics. Through structural path analysis, we focused on five core dimensions: Organizational Support for AI Adoption (OSA), AI Participation in Collaboration and the Work Environment (ECWE), Awareness of AI (AIA), Dependence and Workplace Productivity (DWP), and the Impact on Employment and Job Security (IEJS). Findings reveal that strong organizational support is critical in creating the conditions for successful AI use, particularly regarding teamwork and collaboration. Environments that foster collaborative work tend to generate better outcomes from AI efforts. At the same time, when employees are more aware and knowledgeable about AI, they are more likely to use it effectively and benefit from its capabilities. This study highlights the need for organizations to strengthen their internal support systems, promote collaborative practices, and invest in employee upskilling to make the most out of AI. For institutions planning to adopt or expand AI technologies, the results point to a clear takeaway: institutional readiness must go hand in hand with employee involvement and awareness.

Keywords
Artificial Intelligence, Workplace Productivity, Employee Perceptions, Industry Knowledge, Digital Transformation

1. Introduction
Change in the workplace Artificial intelligence (AI) is transforming the workplace in all sectors in the Philippines, affecting team collaboration, productivity, organizational operations, and roles. AI helps the top IT-BPM, banking, and manufacturing industries increase productivity, cost-effectiveness, and quality, maintaining the same concerns about workforce preparedness and data security (Frias, 2024). The International Monetary Fund continues to say that

approximately a third of the Filipino workers are highly exposed to AI. Nevertheless, most of these jobs also have a high complementarity, which signifies productivity improvements, especially in services and BPO (Hennig, 2025). The impact of AI on cooperation, industry expertise, labor, job security, the use of AI in organizations, and dependence on AI to aid productivity are taken up in this research. Through the analysis of feedback from professionals from various industries in the Philippines, the research sheds light on how AI adoption influences organizational dynamics and staff experiences, providing practical implications for organizations embracing digital change. The study indicates that AI has been assimilating into the workforce so fast that individuals have not had a chance to form a strong interest in how it has affected employees. Therefore, their genuine concerns are being ignored. The research was intended to evaluate the perceptions of employees on AI in the organization by applying five key variables: AI's function with regards to improving collaboration and work in the environment, organizational support in embracing AI, reliance on AI about productivity achieved in the workplace, consciousness of AI about industry awareness, and impacts employment with job security considerations. According to recent studies, AI systems can improve teamwork by streamlining communication and decision-making procedures. It is widely acknowledged that artificial intelligence (AI) can increase productivity by supporting human capabilities and automating repetitive tasks (Brynjolfsson & McAfee, 2021).

It is important to note that even with an increase in research on AI and workplace-related issues, an employee misses postulating the intervening variables in terms of how they define organizational support, knowledge, and perceived impacts, meaning several dimensions of an employee's perception in terms of collaboration, productivity, and job security. Although much research has been done on AI's effects on the workplace, recent studies by Choi et al. (2022) and Xu et al. (2023) indicate that more in-depth investigation is required into how workers view and define the intervening variables that mediate AI's effects on collaboration, productivity, and job security. Addressing this gap can provide deeper insights into the complexities of AI-human integration in organizational settings. The available literature primarily deals with the macros of AI applications or their impact on organizational productivity. Few studies investigate the nuanced perceptions of employees across various dimensions such as collaboration, productivity, and job security. Additionally, no seamless general models create relationships and test their causal links about these constructs; therefore, there is an incomplete scenario of AI in the workplace regarding the employee. In favor of concentrating on the macro-level impacts of AI on organizational productivity and efficiency, the current literature usually overlooks the more nuanced, individual-level perceptions of collaboration, productivity, and job security. This implies that the study would bridge this knowledge gap by better comprehending the elements affecting employees' perceptions of AI in the workplace. By capturing both individual and organizational aspects, the study provides a thorough understanding of how AI is changing the dynamics of organizations. Before implementing AI technologies, businesses must comprehend how AI impacts productivity, job security, and teamwork (Jarrahi, 2018). The study's findings can also help companies develop training programs, support networks, and valuable strategies that will aid employees in acclimating to the evolving workplaces brought about by AI integration.

1.1 Objectives
This study looks at how workplace productivity is impacted by employee awareness, organizational support, and AI-enhanced collaboration in the Philippines' context of AI adoption. With an emphasis on collaboration, effectiveness, and job security, it seeks to understand how professionals from diverse industries perceive and respond to the application of AI in the workplace.

Specifically, the research aims to:
1. To ascertain how organizational support affects the use of AI in the workplace. This entails determining what policies, training, support, leadership, and infrastructure allow employees to work with AI tools and systems more efficiently.
2. To look into how AI could enhance collaboration and the workplace in general. The study aims to determine whether AI technologies improve teamwork, communication, and decision-making.
3. To evaluate workers' knowledge and comprehension of AI concepts and tools across various industries. This entails assessing employees' knowledge of AI's potential, constraints, and applicability to their roles.
4. To examine the relationship between increased workplace productivity and AI-enhanced collaboration. The objective is to ascertain whether improved AI-enabled partnership results in more effective, fruitful work outputs.

2. Literature Review

The synthesis of the literature review directs attention to understanding the workplace as a multi-dimensional environment in which AI manifests several forces: institutional support, employee perception, collaboration dynamics, and perceived job stability. A system-level realization would capture some complex relationships and give meaningful guidance to a more effective and inclusive adoption of AI in diverse organizational setups. Studies have been piling up since this much supposed punctuated equilibrium development after integrating AI into workplace systems. While employees argue about the security of their jobs because of technology development, research has been exploring the limitless possibilities AI has brought to collaboration and productivity through assessments of its use by employees (Arora & Mittal, 2024). Although many writers, for example, present cases of how AI enables effective collaboration and facilitates cross-functional lines by simplifying communication among employees and supervisors (Duan et al., 2021), organizational support is a complete requirement for the proper adoption of AI.

It is important to note that AI integration in the workplace is multidisciplinary and is thus defined by many factors, such as institutional support, employee outlook, collaboration dynamics, or job security, to name a few. These complex relationships demand a system-level realization to follow meaningful guidance to a more effective and inclusive adoption of AI among diverse organizational setups. AI has created a kaleidoscope of employee collaboration, productivity, awareness, and job security advancements. The extent to which such an interface has impacted them is currently a developing study area. Researchers contend that by automating strategic decision-making processes based on more trustworthy data rather than straightforward routine tasks, AI technologies can significantly increase an organization's efficiency (Arora & Mittal, 2024). More coordinated and flexible work environments have been encouraged by AI's capacity to facilitate cross-functional collaboration and expedite communications (Duan et al., 2021). According to the findings above, organizational support is one of the key elements that significantly influences the successful adoption of this technology. Studies show that this preparedness, including institutional investments in infrastructure, training, and change management, makes integrating this innovation easier for the institution.

3. Methods

This quantitative study combined path analysis and multivariate analysis to examine the effects of several factors. The participants' responses were compiled using descriptive statistics, and how variables interacted with one another were ascertained using inferential techniques (Kong et al., 2023). A correlation analysis was also conducted to determine the direction and degree of association between the main concepts. This approach made it possible to gain an open, fact-based understanding of how AI affects productivity, job security, and teamwork in the workplace (Arora & Mittal, 2024).

4. Data Collection

Convenience sampling was used to select 105 participants from the Philippines' National Capital Region (NCR) for this study. The participants' age, job rank, industry, and level of work experience varied. The most significant number of respondents was from the government sector (21%), followed by academe (16%), business process outsourcing (15%), banking and finance (14%), and manufacturing (5%), while the rest of the 28% were from other different industries like: construction, information technology, energy, healthcare, retail and e-commerce, logistics, telecommunications, hospitality, and pharmaceuticals. Most participants (80%) were aged 25–34, 12% aged 35–44, 5% aged 18–24, and 3% aged 45–54. Regarding job levels, 53% were mid-level professionals, 20% held senior-level positions, 16% were in managerial or executive roles, and 11% were at the entry level. Work experience varied among participants, with 6% having less than one year of experience, 19% having 1–3 years, 24% having 4–6 years, 25% having 7–10 years, and 27% having more than 10 years.

Due to limitations such as time and accessibility to the large population in the NCR, convenience sampling was used in this study. This specific method is most typically utilized in organizational research; convenience samples accounted for 90.7% of the coded samples (Zickar & Keith, 2022). By distributing surveys at different times and places, researchers can increase diversity and overcome the drawbacks of the sampling technique, which will increase the possibility of obtaining a more representative sample of the target population. Furthermore, gathering more data can reduce bias and improve the dependability (Etikan, 2022). The participants were purposefully selected from various industries, including government, academia, business process outsourcing, finance, and manufacturing, among others, to increase diversity. Furthermore, we adjusted to include a reasonable spectrum of participants' ages, work experiences, and job levels. Many of the participants came from a larger audience where a varied set of distribution channels and professional networks were sourced to participate at the same time, while reducing the possibility of

overrepresentation from one individual group, and ultimately increasing the validity of our results (noting limitations to the sampling technique).

Data was collected through a structured survey with 105 participants from the Philippines' National Capital Region (NCR). Convenience sampling was employed, where the natural use of the snowballing technique was possible (Naderifar et al, 2017). The employees' perception of Artificial Intelligence (AI) at the workplace was measured through the survey. The survey was disseminated through online survey panels and professional networks so that the respondents represented different industries. Respondents were targeted professional respondents from government, academe, business process outsourcing, banking and finance, manufacturing, and related work streams. The participants were made aware of the purpose of the study before participation, indicating that their identity would not be attributed to the collected data and that the survey was anonymous. We used multiple-choice and Likert scale items so each respondent could rate their attitudes towards AI regarding relevance to their work setting, as outlined in AI's contribution to collaboration, work environment productivity, organizational assistance, familiarity with the industry environment, and job security. We included a small number of narrative questions to enable a greater explanation of participant responses (Caruth, 2013). Data collection was carried out for two weeks to guarantee a sufficient response rate of 90%. After that, responses were methodically recorded and examined to understand how AI affects the workforce.

5. Results and Discussion

The study summarizes the significant findings regarding employee perceptions of AI in the workplace. Based upon a structured survey, the study outlines five constructs that could affect employees' attitudes towards AI: collaborative and work environment; organizational support systems; productivity and dependency; awareness and knowledge; and perceived impact on employment and job security. Results were derived from exploratory factor analysis, path modeling, and correlational techniques that provided empirical insights into the relations among these variables and added knowledge into how AI shapes workplace dynamics. The discussion elaborates on these relationships to confirm the validity of the conceptual framework and points out achievable future research regarding the ethical and sustainable adoption of AI.

5.1 Key Dimensions of Employee Perception on AI Integration in the Workplace

The survey aimed to assess employees' perceptions of AI in the workplace by exploring five key constructs (see Table 1): AI enhances Collaboration and Work Environment (9 statements), which examines the impact of AI on teamwork, communication, and efficiency in improving workflow and task management. Sample statements are "AI enhances cross-functional collaboration" and "AI allows employees to focus on more strategic and creative tasks." Organizational Support for AI Adoption (5 statements) evaluates how organizations facilitate AI introduction through workplace training and adaptation. This includes statements such as: "My organization provides adequate support for AI adoption and usage," and "My organization offers reskilling or upskilling programs to help employees adapt to AI." The scale for AI Dependence and Workplace Productivity (4 statements) includes assessments of employee reliance on artificial intelligence to make decisions and increase productivity: "I rely on AI to complete daily activities and make decisions." "AI has substantially contributed to my workplace productivity." The scale for AI Awareness and Knowledge of the Industry (4 statements) examined employee understanding of AI, the risks and benefits of utilizing AI, and their efforts to stay informed about developments in the field. Some items in the scale included: "I feel confident that I can articulate how AI is used in my industry." "I actively seek to stay informed about trends and advancements in AI." There was also a scale for AI's Impact on Employment and Job Security (3 statements) to evaluate whether employees view AI as either a threat or an enabler of job security, with statements like: "The implementation of AI has facilitated job creation rather than job loss in my industry" and "I feel ready to adapt to workplace changes related to AI" (Duan et al., 2021).

Table 1. Exploratory Factor Analysis (N=105)

Constructs	Statements	Factor Loadings
AI's Role in Enhancing Collaboration and Work Environment (ECWE)	AI enhances cross-functional collaboration	0.837
	AI fosters a more inclusive and efficient work environment	0.807
	AI improves teamwork and communication in my organization.	0.768
	AI helps in managing workflow and task delegation.	0.761
	AI contributes positively to job satisfaction and work-life balance.	0.724
	AI-powered tools improve knowledge-sharing and coordination among teams.	0.696
	AI-driven tools contribute to a more engaging and productive work environment.	0.690
	AI allows employees to focus on more strategic and creative tasks.	0.664
	AI speeds up decision-making and problem-solving in my workplace.	0.658
Organizational Support for AI Adoption (OSA)	My organization provides adequate support for AI adoption and usage.	0.788
	My organization offers reskilling or upskilling programs to help employees adapt to AI.	0.756
	AI is well-integrated into my workplace processes.	0.680
	My workplace frequently uses AI-driven tools and technologies.	0.664
	Employees in my workplace are comfortable using AI-driven processes.	0.634
AI Dependence and Workplace Productivity (DWP)	I rely on AI for daily tasks and decision-making.	0.834
	AI has improved the efficiency of my work.	0.686
	AI-generated outputs in my workplace are generally accurate and reliable.	0.560
	AI has significantly improved productivity in my workplace.	0.510
AI Awareness and Industry Knowledge (AIK)	I can confidently explain AI's role in my industry.	0.830
	I am familiar with AI and its applications in my industry.	0.794
	I understand the potential risks and benefits of AI in my field.	0.776
	I actively keep up with AI trends and advancements.	0.689
AI's Impact on Employment & Job Security (IEJS)	AI implementation has led to job opportunities rather than job losses in my industry.	0.775
	AI adoption increases job security in my industry.	0.718
	I feel prepared to adapt to AI-related changes in my job	0.508

Note: Principal Component Analysis (PCA) with varimax rotation was conducted to identify underlying factors. A Rotated Component Matrix with a 0.50 loading suppression threshold was applied to highlight only substantial variable-component relationships.

Table 2. Perspectives Of Employees on the Impact of Artificial Intelligence in the Workplace

Constructs	Rank	Cronbach's Alpha	Variance	Mean	Standard Deviation
AI's Role in Enhancing Collaboration and Work Environment (ECWE)	1	0.926	24.13%	3.59	0.68
Organizational Support for AI Adoption (OSA)	2	0.874	14.69%	3.34	0.80
AI Dependence and Workplace Productivity (DWP)	3	0.837	11.49%	3.43	0.77
AI Awareness and Industry Knowledge (AIK)	4	0.835	11.44%	4.12	0.63
AI's Impact on Employment & Job Security (IEJS)	5	0.735	7.33%	3.45	0.70
	TOTAL		68.08%		

Note: The Likert scale used for mean scores ranged from 1.00 (Low) to 5.00 (High)

The AI Dependence and Workplace Productivity ranks third with an average of 3.43 (Table 2). The respondents have a general positive perception that AI helps increase productivity in the workplace. However, opinions vary, such as organizational support, with a general standard deviation of 0.77. The reliability score of 0.837 is also good, which adds further weight to the general validity of the responses (see Table 3). The fourth factor, AI Awareness and Industry Knowledge, is that respondents feel strongly that AI requires awareness and knowledge, giving the highest mean of 4.12 (SD=0.63). There is some awareness, although some gaps must merit specific attention, considering the considerably lower number of statements. The reliability of 0.835 indicates a satisfactory score with a low variability that resonates with the general view of most of the respondents. Lastly, AI's Impact on Employment and Job Security rates the weakest with a mean of 3.45 (SD=0.70). Some, however, tended to disagree that AI will significantly impact jobs, as reflected by the variability, which indicates a higher level of disagreement among the respondents once again. With a score of 0.735, its reliability is comparatively good, i.e., among the lowest, showing that this group of questions gets mixed opinions. The data, taken together, indicate a relatively optimistic view of AI in the workplace, especially regarding collaboration and AI awareness. The Pearson correlation analysis (see Table 3) revealed significant relationships among the five constructs, indicating their interdependence in understanding AI's impact in the workplace. AI's role in Enhancing Collaboration and Work Environment exhibited strong correlations with Organizational Support for AI Adoption (0.610, 37.21%) and AI Dependence and Workplace Productivity (0.627, 39.31%), suggesting that AI adoption and reliance contribute to improved teamwork and efficiency. Organizational Support for AI Adoption showed the highest correlation with AI Dependence and Workplace Productivity (0.666, 44.36%), highlighting the importance of workplace readiness and training in AI-driven productivity. AI Awareness and Industry Knowledge had moderate correlations with other constructs, with its highest association found with AI's Impact on Employment and Job Security (0.370, 13.69%), indicating that AI awareness influences perceptions of job security. The relationship between AI Dependence and Workplace Productivity and AI's Impact on Employment and Job Security (0.567, 32.15%) suggests that AI-driven efficiency improvements may shape job security perspectives.

Table 3. Relationship of Each Construct

Constructs	Paired Variables	Pearson's Correlation	% Shared Variance
AI's Role in Enhancing Collaboration and Work Environment (ECWE)	Organizational Support for AI Adoption (OSA)	0.610	37.21%
	AI Dependence and Workplace Productivity (DWP)	0.627	39.31%
	AI Awareness and Industry Knowledge (AIK)	0.274	7.51%
	EIJS	0.593	35.16%
Organizational Support for AI Adoption (OSA)	AI Dependence and Workplace Productivity (DWP)	0.666	44.36%
	AI Awareness and Industry Knowledge (AIK)	0.462	21.34%
	AI's Impact on Employment & Job Security (IEJS)	0.552	30.47%
AI Dependence and Workplace Productivity (DWP)	AI Awareness and Industry Knowledge (AIK)	0.465	21.62%
	AI's Impact on Employment & Job Security (IEJS)	0.567	32.15%
AI Awareness and Industry Knowledge (AIK)	AI's Impact on Employment & Job Security (IEJS)	0.370	13.69%

5.2 Path Analysis of Factors Influencing AI-Driven Workplace Productivity

Path analysis (see Figure 1) was utilized to examine the direct and indirect relationships of the significant variables. Here, an assessment is made regarding the strength and direction of causation to obtain further granularity about the multicausal relationship between an independent variable and the dependent variable, either directly or through intermediary variables.

From the path diagram (see Figure 1) and by estimating coarse multiple regression equations, the analysis helps identify significant predictors and their extent of effects in the system. Validation of the theoretical framework was done using this approach, and further identification of the mechanisms through which certain factors exercised their influence. Figure 1 implies that AI's Role in Enhancing Collaboration and the Work Environment (ECWE) manifests a moderate positive effect on AI Dependence and Workplace Productivity (DWP) with a β value of 0.354 in this model, such that the more employees perceive AI as improving teamwork and the work setting, the more employees rely on AI and perceive productivity.
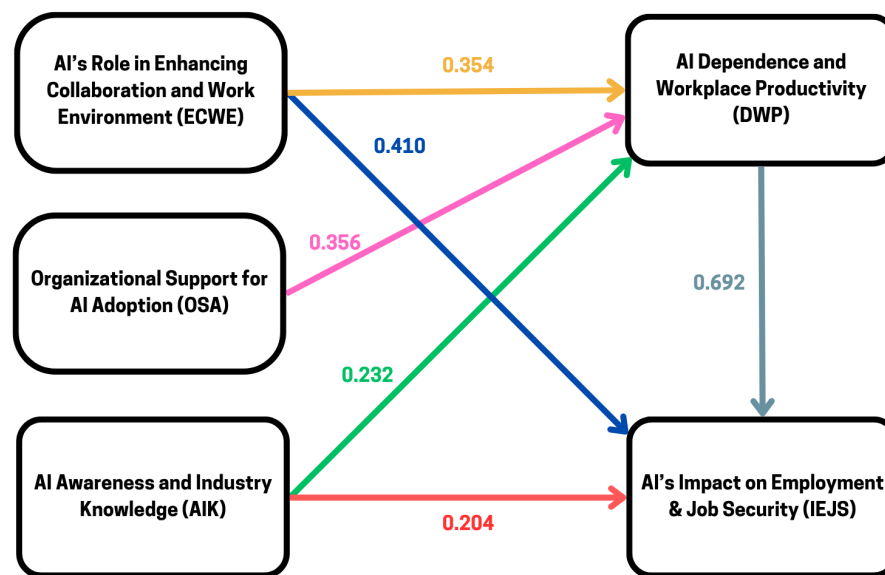
Figure 1. Path Analysis of Employee Perceptions Regarding the Impact of Artificial Intelligence at Work
Note: CFI (0.95), RMSEA (0.06). Stronger relationships are indicated by higher β values, which show the degree of influence between factors.

Figure 1 also indicates that Organizational Support for AI Adoption (OSA) having a β value of 0.356 also possesses a moderate positive effect on workplace productivity which is highlighted by the fact that organizations with active integration of AI (e.g., through infrastructure, training and encouragement of leadership) increase both the levels of AI engagement and productivity within the organization through the employees. Similarly, the Awareness and Knowledge about AI's Use in the Industry (AIK), which has a β value of 0.204, produces a positive but less substantial effect on productivity since, although awareness of AI trends and applications can assist in such, it does not compare closely with collaborative environment and organizational support.

Figure 1 also highlights two critical fit indices to check the degree of fit of the scientific model to the data: Root Mean Square Error of Approximation (RMSEA) and Comparative Fit Index (CFI). The RMSEA less than or equal to 0.06 indicates that the model fits well, suggesting that the study's relationships among the constructs are sufficiently supported. The CFI value is an excellent fit since it touches or goes beyond 0.95. This means the model explains the data almost perfectly relative to the null model. Figure 1 suggests that the set of indicators provided insight into the fit concerning the proposed causal relationships theorized in the model, incorporating ECWE, OSA, and AIK, into these data. A good fit would indicate that the model accurately describes the relationships.

5.3 Research Directions for Ethical and Sustainable AI Integration in the Workplace

The future investigation of AI-mediated job transition should tilt the other way and focus on quantitative and multivariate analysis and how these affect employee morale and satisfaction. A structured examination of these dynamics shows different acceptance levels regarding AI in various industries, that is, industries experiencing a smoother transition versus others that find it hard to adapt. Multivariate regression analysis could be used to understand the interaction between AI implementation and job satisfaction, while longitudinal studies would be apt to investigate changing employee morale over time. In addition, Structural Equation Modeling (SEM) can analyze both direct and indirect associations that would be of interest (e.g., AI-mediated workplace engagement, empowerment, and perceived job security), thus providing a wholesome understanding of the effect of AI on employee wellbeing in the industry (Sadeghi, 2024).

5.3.1 Technostress, AI Resistance, and Trust in Automation

Another key area to investigate is technostress, which relates to how often AI systems are updated for evaluation and how much control employees feel they lose over their work processes. Technostress is a contemporary condition in which people find it difficult to adjust to new computer technologies healthily (Gorfu & Chu, 2024). Such a phenomenon could be studied using hierarchical regression models, where various factors are analyzed to see their contribution toward the technostress factor and its impact on job performance. Moreover, moderating variables or factors like organizational support and training programs, as well as mediating factors considered for analysis, would be employee adaptability and workload changes, which would throw light on which pathway accentuates stress and which alleviates it. In addition, factor analysis could help with this, categorizing different dimensions of technostress by visibility in employee disturbance concern and lending credence to contention on how organizations could downplay the jittering effects. Further research is also necessary to determine whether AI adoption is accepted or resisted, especially using latent class analysis (LCA), which divides workers into groups according to their AI attitudes (Pflügner et al., 2024).

By examining demographic, psychological, and occupational characteristics, researchers will determine significant predictors for AI resistance and develop programming to overcome fears. In all these studies, the researchers can use logistic regression models to explore the relative value of perceived benefits (e.g., convenience, lower workload), perceived threats (e.g., job displacement, neglect of privacy), and what organizations might reasonably do to support AI-acceptance while acknowledging employee fears. For instance, research has shown that transparency around AI makes a meaningful contribution to programming trust, as it was observed that transparent AI promotes more confidence because it reduces anxiety related to bias and privacy (Yu & Li, 2022). In addition to transparency, trust in AI is another significant predictor of successful applications, especially regarding bias and data privacy as they relate to successful applications in workplace practices (e.g., Yu & Li, 2022). A multivariate analysis of variances (MANOVA) would allow a researcher to explore inattentional blindness at different levels of AI transparency and how that impacts employee trust in the AI employment decision. Also, applying predictive analytics to examine the probability of employees trusting AI under different operational and ethical conditions could identify trends that would engender employee confidence in AI-driven decisions. The effects of bias mitigation techniques, like explainable AI and fairness audits, on boosting confidence and guaranteeing that AI judgments are regarded as trustworthy and equitable could also be investigated.

5.3.3 Governance, Ethics, and the Human-AI Interface

The discussion over the importance of supervisory oversight in automated processes is highly relevant given the growing role of AI in society. The debate of AI-driven decisions and the ensuing human intervention may be covered in research. These network studies ought to have been used to create some illustrations that would have shown visual representations as overlays toward more compassionate organizational structures (Zhang et al., 2021). The impact of different elements, like team structures, managerial procedures, or AI transparency, on the efficiency of human oversight could be examined using Multilevel modeling (MLM). The effectiveness of different governance strategies, such as AI ethics committees and explanation frameworks, can also be directly assessed through an experimental or quasi-experimental approach to build evidence-based recommendations on supervisory mechanisms that combine efficiency and ethical considerations. Lastly, discussions should be on this aspect of AI-human integration, especially concerning the lesser explored areas involving ethics and emotions. With the discrete choice experiment-designed research, one could examine how employees weigh AI-beneficial factors like equity, accuracy, and emotional intelligence within their decision-making dynamics.

Furthermore, sentiment analysis on employee communications can reveal how perceptions of AI evolve. Causal inference models, such as propensity score matching, could be applied to examine improved decision quality from AI-assisted systems versus human-embedded systems. As such, organizations will be able to understand where AI can refine and boost human judgment and spot some of its limitations. A quantitative and multivariate approach to research in these areas will produce evidence to lay the backdrop for establishing data-driven policies in an organizational partnership. These functions are offered better, balancing efficiency, ethical conduct, and workforce well-being (Boni, 2021). Staying ahead with the future adequate understanding of these relationships will engage organizations in the configuration of AI systems that, rather than simply enhancing productivity, support their employees through technology, eventually giving timeless collaboration and some subsistence to the future of human-AI interface in the workplace.

5.3.4 Empirical Validation of AI's Role in Enhancing Collaboration and Productivity

The results of the correlation and path analyses revealed significant relationships between the key constructs in the model. Notably, AI's Role in Enhancing Collaboration and Work Environment (ECWE) exhibited strong correlations with both Organizational Support for AI Adoption (OSA) (0.610) and AI Dependence and Workplace Productivity (DWP) (0.627), suggesting that collaborative advantages of AI are closely associated with both organizational readiness and improved productivity. Furthermore, OSA showed the strongest correlation with DWP (0.666), underscoring the pivotal role of institutional support in facilitating AI-driven productivity gains. To assess the direct effects of the independent variables on the dependent variable, DWP, path analysis was used (Raisch & Krakowski, 2021).

6. Conclusion

The study sought to find out how employees viewed introducing AI at their respective places of work using organizational support, collaboration, productivity, and AI awareness as the four constructs. Path analysis was used in the study, revealing important associations between organizational preparedness, staff engagement with AI, and employment outcomes. It was shown that the Institutional Support for AI Adoption (OSA) and AI Role in Supporting Collaboration and Work Environment (ECWE) have a positive correlation (r = 0.610), meaning that the systems of support employed in an organization have a significant impact on the outcome of collaboration that is caused by the use of AI. When r=0.666, the OSA had a very high correlation with the AI Dependence and Workplace Productivity (DWP). This suggests that larger organizational resources, including infrastructure, the role of leadership, and training, have remarkable impacts on productivity when using AI in work performance. AI-fueled collaboration also significantly influenced productivity (r=0.627), indicating that AI supports workplace outcomes through teamwork and communication, achieving the actual value of AI. Integrating AI into collaborative workflows streamlines operations and enhances employee coordination, improving efficiency and performance. Employee awareness and knowledge of AI moderately influenced perceived outcomes, particularly acceptance and productivity. This indicates that a workforce with a clear understanding of AI technologies is more likely to adapt positively and utilize AI tools effectively (Fitri et al., 2023). The path analysis further confirmed the direct and independent influence of organizational support and collaborative AI use on productivity outcomes. These findings validate the integrated AI adoption model, where structural and functional dimensions contribute uniquely yet complementarily to enhanced workplace performance. In summary, the study provides evidence that AI adoption in the workplace is most effective when supported by a holistic approach that includes strong institutional backing, collaborative frameworks, and employee awareness (Przegalinska et al., 2024). For organizations planning to implement or scale AI initiatives, it is crucial to invest not only in the technology itself but also in the organizational systems and human capital that will sustain its integration and maximize its impact.

Acknowledgment

Conflict of Interest, Declaration of Ethical Compliance, and Declaration of AI Usage

The authors confirm that no generative AI was used to develop ideas, though AI enhanced language and readability. Humans thoroughly reviewed and edited all content to ensure accuracy and clarity. The researcher declares no conflict of interest and confirms that ethical standards were upheld throughout the study. Participants were fully informed of the study's purpose, assured of their voluntary participation, and guaranteed confidentiality. Data were collected anonymously, and informed consent was obtained before the survey.

Authorship Contribution Statement

Gerald Semifrania wrote the Introduction, Results, Conclusion, and Abstract. He also worked on the Method Section, including portions about the participants, the measures, and the data collection process. Gerald also contributed to data

analysis. Gerald Semifrania was instrumental in formatting the manuscript in the conference proceedings style and incorporating the literature review so that the study would align with the research framework. Jaypy Tenerife authored the Data Analysis part, using his knowledge and expertise in quantitative analysis and multivariate analysis. He also gave directions for future studies, ensuring strict analysis and interpretation of the findings. Both authors contributed to instrument design.

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