# ANALYZING THE EFFECT OF ARTIFICIAL INTELLIGENCE (AI) ON EMPLOYEES PERFORMANCE AND PRODUCTIVITY TO ACHIEVE BETTER ORGANIZATIONAL INTELLIGENCE. A REVIEW AND FUTURE RESEARCH DIRECTIONS

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## Abstract

This review paper deals with the incorporation of artificial intelligence (AI) into organizational structures and how it affects employee performance, productivity, and overall organizational intelligence. With the increasing tendency of organizations toward AI applications, understanding these technologies' relationships with paramount dependent variables becomes imperative for maximizing benefit. The study uses the Technology Acceptance Model 2 (TAM2) as the theoretical foundation of the study. It is, therefore, a strong methodology through which the acceptance of AI within organizations can be analyzed. TAM2 lays emphasis on the perceived usefulness and perceived ease of use, which are crucial factors in employee engagement with AI systems. The independent variables in the study would be AI integration, specific AI applications, training and development interventions, organizational culture, and infrastructure for digital. The study also inquired into moderators such as anxiety on job loss, ethics, and culture to measure their influence on AI adoption. This paper will give a general survey of the literature on how AI would turn workplaces upside down and produce better results for organizations. The relevance of nurturing a friendly environment towards AI integration has been enhanced by training initiatives that optimally deploy an adaptable organization culture. By identifying gaps in the current literature, this study sets the groundwork for future empirical research using quantitative

methodologies, including survey development and structural equation modeling (SEM) to further investigate the hypothesized relationships among these variables. Ultimately, this review contributes to understanding AI's potential to transform work environments-and offers practical recommendations for organizations that want to leverage AI to improve their performance and productivity.

**KEY WORDS:** Digital Infrastructure, Artificial Intelligence Organizational Intelligence, Job Displacement Concerns, Organizational Culture, Ethical Considerations, Cultural Resistance.

## BACKGROUND OF THE STUDY

Employee performance is the effectiveness and efficiency with which individuals perform their duties. Research shows that the acceptance of AI technologies will considerably improve employee performance by automating repetitive tasks to allow employees to concentrate on complex and value-added activities (Bessen, 2024). For instance, AI-enabled analytics produce real-time insights to inform decision-making, realized in better job outcomes and quality of work (Davenport and Ronanki, 2024).

Employee productivity can further be defined as a measure of output relative to input with simplified unit of measure such as sales or progress in projects. AI applications intervention, particularly directed towards automation and data analysis, ostensibly have productivity boosting activity levels since they improve the efficiency of workflows by lowering the time spent on repetitive activities (Brynjolfsson & McAfee, 2024).

Productivity growth is crucial for an organization to be competitive in this newly created digital marketplace. Hence, organizational intelligence would include the capacity of an organization to mine from AI data and insights for informed decisions and strategic planning. The more organizations turn to AI, the more their ability to analyze huge volumes of data boosts up, yielding better strategies and aligning their strategies more effectively with evolving market demands (Chui et al., 2024). This elevated intelligence supports organizational agility and innovation and helps organizations adapt to changing environments.

In other words, the analysis of the interplay between AI integration and these dependent variables opens the way for its transformation potential within the organization and environment engaged in such integration.

It should be known that, by having the virtue of upgrading artificial intelligence (AI) technology at the inevitable pace of miles/minute, this is going to transform the world-spanning intervention of many of its sectors. It implies significant repercussions from improved employee performance and productivity in developed and developing countries regarding what they do. Organizations based in developed countries incorporate AI into their operations to make their operations run better, their workflows more straightforward, and their decision-making processes more robust (Brynjolfsson & McAfee, 2014). Most of the uses for this type of integration increase employee performance since repetitive tasks are done by AI systems, leaving workers to engage in what could be considered higher-level strategic and creative endeavors (Davenport & Ronanki, 2018). But the effect isn't all that glorious; there are other issues like job loss and the need for reskilling (Bessen, 2019).

Particularly, countries like Pakistan find many different challenges and much more opportunity to achieve the capabilities that AI can bring to this organization. The improvement of productivity through AI becomes most significant in the context of a country needing the economic growth required to alleviate poverty and unemployment (Khan et al., 2020). Therefore, even though these technologies now promise to bring huge gains, the acceptance of this new technology is still at a low level in Pakistan, compared to the developed world, primarily due to infrastructure shortcomings, lack of access to advanced technologies, and absence of a skilled workforce (Ali et al., 2021). But it will be totally different soon, considering how a new generation of start-ups and initiatives around developing AI are quickly beginning to revive the landscape, offering increasingly available options for advancing employee performance and innovation (Siddique et al., 2022).

The emerging contrast between developed and developing countries in AI adoption offers an interesting analysis of how these effects extend to employees. In the developed context, the focus is rather on operationalizing the talent augments use of AI tools to supplement human capabilities (Chui et al., 2016). For example, US and European enterprises have successfully rolled out AI-

driven analytics-oriented systems to improve their decision-making and achieve enhanced productivity and competitive advantage (McKinsey Global Institute, 2017). On the contrary, for countries like Pakistan, the intended direction may change concerning the argument of how AI may generate it as a catalyst for the economic development of the productive industries such as agriculture, manufacturing prospering, and service sectors, where the prime necessity is for national growth (Khan et al., 2020).

Besides, the national culture significantly determines the impact of AI on employee performance. In developed countries, for example, a culture of innovation and adaptability might facilitate the most favorable adoption of AI technologies (Leicht-Deobald et al., 2019). Employees in these regions typically see AI as a tool that can improve their work rather than as something that can replace their roles. However, in countries like Pakistan, traditionalism might suffer threats of entry of AI in jobs, with most fearing job losses, litte knowledge, and lack of acceptance (Ali et al., 2021). This cultural aspect requires every organization to have effective change management strategies during the implementation of AI technologies.

Also, education and training play an essential role in both settings. In developed countries, continuous professional development and up skilling are intrinsic to most parts of the workforce so that employees can adapt to new technologies (Bessen, 2019). Organizations spend on training programs to enable their employees work with AI systems without further hitches and thereby improving overall productivity.

On the other hand, countries with developing economies, such as Pakistan, have been facing hurdles to provide sufficient training and education in artificial intelligence and related fields (Siddique et al., 2022). This developed skills gap would adversely affect the deployment of AI since it will restrict the potential of this technology to increase employee performance and productivity.

As AI continues to evolve, both developed and developing countries are bound to experience challenges to its adaptation as it pertains to the future of work. Indeed, this is perhaps one of the influences that will shape the future of work in both developed and developing nations. Driving an organization towards intelligence through AI will depend on the capability of creating an environment where human and machines supplement each other (Davenport & Ronanki, 2018).

For developed countries, the focus may remain on enhancing strategic decision-making and operational efficiency. On the contrary, developing countries such as Pakistan will need to focus mainly on building a strong ecosystem that trains and prepares for AI going from education and training to infrastructure development.

## PROBLEM STATEMENT

As AI continues to grow with respect to its use in several sectors, so many important issues and problems arise, particularly between developed and developing countries- employee performance and productivity. There is a major concern for job loss as human operations become mostly automated by artificial intelligence applications. Studies indicate that in most developed countries, up to 47% of jobs are at risk of automating tasks with advancements in AI technologies (Frey & Osborne, 2017).

Such a scenario brings about this increased fear leading to witnessed anxiety among employees affecting the morale and overall productivity of workers as they grapple with the fears of their job security (Bessen, 2019). This phenomenon is even more than apparently visible in developing states like Pakistan, whose major workforce falls under the unskilled category; hence future threats of job loss here due to automation are even greater because of possible occupation types that are prone to automated ways e.g. mostly in manufacturing and agriculture (Khan et al., 2020).

Another issue is that with the growing gap in information technology, developed countries and developing countries have a gap in AI. To have fair access to AI technologies will be meant for developed countries where they invest a great deal more in the research or implementation of AI (Ali et al., 2021). This complicates the chances of even poor countries in accessing the benefits of AI for an economy that is already unevenly sized in terms of its richness and production.

Furthermore, in countries such as Pakistan, the inflexible and poor education system along with no training programs in AI and digital skills limited the adoption process (Siddique et al., 2022). Thus, employees find it difficult to use the new AI tools without training and can hence lead to inefficiencies and performance losses.

There are also resistance factors that are cultural and organizational with regard to AI integration. While developed countries are generally open to new technological innovations, employees are

usually concerned about the perceived impact of such innovations on their very own roles and workplace environments (Leicht-Deobald et al., 2019). Compared to this, traditional ways of working and the lack of awareness regarding AI have caused an added confusion and have awakened skepticism and resistance among the individuals in Pakistan.

This could add further complications in the process of adoption (Ali et al., 2021). Such type of resistance invariably blocks not only the way to AI-enabled technologies, but can also cause a huge gap between AI capabilities and the performance of employees.

Then again, there are ethical considerations when using AI. Much of the data-related privacy issues, algorithmic bias, and transparency evoke alarm bells when organizations increasingly depend on AI for undertaking decision-making functions (O'Neil, 2016). In all countries, whether developed or developing nations, the absence of clear stipulations and ethical paradigms for application of AI will definitely result into unanticipated outcomes such as unfair treatment against disadvantaged segments of the population or even loss of personal data (Zuboff, 2019). These ethical conundrums further render integration difficult for AI into organizations and create counterproductive incidences on employee trust and morale.

## AIM AND OBJECTIVES

This study mainly aims at understanding the impact of artificial intelligence on employee performance and productivity as the organization seeks to improve organizational intelligence in developed as well developing countries. It also aims to study the functioning of artificial intelligence in the organizational framework considering the related challenges and ethical issues, specifically in the Pakistani context.

## RESEARCH OBJECTIVES

1. To explore the effects of AI in employee performance

a.       examining how AI technologies affect productivity for employees in various sectors in developed as well as developing countries

b.       Determine specific AI applications that have considerable overall effects on employee performance.

2. To Assess the Barriers of AI Adoption

a.       Identify the barriers to AI adoption in organizations, such as cultural resistance, skill gaps, and infrastructural constraints, especially in a developing country like Pakistan.

b.       Assess the impact of worries about job displacement on employee morale and productivity.

3. Evaluation in the Digital Divide:

a.       Investigation of Disparity in AI Adoption between Developing and Developed Countries with Respect to Resources Availability and Access to Technologies.

b.       Assessment of Digital Divide Implications on Employee Performance and Organizational Growth.

4.       Addressing Ethical Considerations:

a.       The Identification of Ethical Dilemmas in AI Deployment, Including Data Privacy, Algorithmic Bias, and Trust as it Relates to Employees

b.       Guidelines for Ethical Use of AI in the Organization to Help Ensure Transparency and Accountability.

## SIGNIFICANCE OF THE STUDY

This study is primarily important in terms of contributing some valid insights to academic literature and practice concerning the use of artificial intelligence (AI) in the workplace. Here are some more reasons that underpin the important value of this research:

**1.       Improving Organizational Performance**

The study analyzes the impact of AI on employee performance and productivity, thereby providing the organization with an evidence base for amending operational efficiency, which leads to better decision processes and, hence, enhanced organizational intelligence.

**2.       Policy Makers and Practitioners Guidance**

The finding can offer policy makers and business leaders in both developing and developed countries ideas concerning the challenges and benefits that can be associated with the adoption of

AI. Understanding these dynamics would assist the formulation of policies for smooth transition of the workforce and the technological integration.

### 3.    Addressing Workforce Anxiety

It provides timely, crucial answers regarding job displacement and employee morale, which can help organizations establish preemptive methods to counter fears and resistance from employees. This knowledge would contribute to a more positive culture in the workplace with AI integration.

Assessing the differences in AI adoption between developed and developing countries, the research highlights deficiencies regarding focusing interventions to bridge the digital divide. This may contribute towards more equitable economic development and improved productivity in developing countries like Pakistan.

### 4.    More Ethical AI Practices

Application from the perspective of ethics on AI deployment states the need for transparency, accountability, and fairness. Thus, proposing directions regarding ethical AI can create routes for the organizations to earn trust from employees and customers, which eventually enhances brand reputation.

### 5.    Informing Educational and Training Programs

Hence, the findings of this study can inform specific training and educational programs for employees to prepare them for working in an AI-enabled workplace. This is especially significant for developing countries, where skill gaps can hinder effective AI adoption.

### 6.    Adding to Academic Research

Adding to the existing body of knowledge on AI and its impact on the workforce, the research identifies gaps and urges further research directions. This can also entice further scholarly inquiry into the implications of AI in diverse cultural and economic contexts.

### 7.    Sustainable Economic Growth

Exploring the ways in which AI can be populated with improving productivity and innovation helps the cause of sustainable economic growth. Indeed, this is crucially important for developing countries trying to find their way into the competitive edge against the markets internationally.

## LITERATURE REVIEW

### AI Integration with Employee Performance

AI technological integration into employee-based models has become a major area of research concerning employee productivity, performance, and the collective intelligence of the organization. The present review in literature investigated relationships among different independent variables relating to AI integration, AI applications, training and development programs, organization culture, and digital infrastructure with its influences on various dependent variables relating to employee performance, employee productivity, and organizational intelligence. The study further discusses the influence of possible moderating variables-job displacement concerns, ethical considerations, cultural resistance, as well as some control variables-demographic factors.

### The Relationship between AI Integration and Employee Performance

AI integration is the degree to which AI technologies have spread through a particular organization. High levels of AI integration have been positively associated with improvements in employee performance. To illustrate, Brynjolfsson and McAfee (2014) indicated that organizations that capitalize on the adoption of artificial intelligence technologies will be able to enhance operational efficiencies, whereby employees can concentrate on doing more value-added work. Such claims were also supported in the research by Davenport and Ronanki (2018), who found out that companies harnessing artificial intelligence for data analysis experience a significant increase in employee productivity and quality of work.

Moreover, artificial intelligence applications bolster a more enlightened workforce since AI systems offer real-time data and insights for decision-making (Chui et al., 2016). Thus, the introduction of AI increases individual performance and, as a result, improves organizational intelligence.

### AI Applications and Employee Productivity

Specific AI applications, automation software, and analytics platforms have been proved significantly effective in influencing productivity at work. The research indicates that the introduction of automation tools enabled employees to significantly use time for activities that are creative and strategic, thus increasing productivity (Bessen, 2019). For example, it is pointed out in a report done by the McKinsey Global Institute (2017) that organizations applying AI-based analytics enjoyed great increases in project completions and sales.

AI application can further help streamline workflows and reduce the time spent on repetitive tasks because this will have a direct impact on employee productivity (Davenport & Ronanki, 2018). However, the benefits accrued from such application would depend highly on the degree of alignment of their specifications within an organization and its employees.

**Training and Development Programs as Facilitators**

Training and Development Programs seem to be important for the employees concerning their skills related to AI. Availability and effectiveness of such programs actually mediate the relationship of AI-integration with employee performance. According to Bessen (2019), continuous training is crucial for employees to get used to new technologies thereby investments made in employee's development yield better improvements in performance.

Research by Khan et al. (2020) illustrates effective training initiatives command higher engagement from employees and satisfaction which translates into improved productivity. Inversely, lack of training-induced anxiety with resistance to AI would negatively affect performance. Hence, comprehensive training programs for AI integration are a necessity for organizations.

**The Influence of Organizational Culture**

Organizational culture plays a significant role in determining relations between employees and their organizations and performance with AI integration. A culture that embraces innovation and technological coupling shares better grounds for improved performance from AI adoption. According to Leicht-Deobald et al. (2019), an organization with a positive attitude toward technology has less resistance to AI invention and higher employee performance incidence.

On the contrary, organizations resistant to change in cultures have strange horses with integrating AI. Cultural resistance to adopting new technologies might entail some discomfort for the employees, who might also get threatened by AI being capable of displacing them from their jobs (Ali et al., 2021). Therefore, an organization should advocate for an organizational culture that embraces and fosters change and innovation to achieve the most potential productivity from employees in AI-driven environments.

**Digital Infrastructure and Its Role**

Digital Infrastructure refers to the technology that is used and the systems that are put into place to allow for the full utilization of AI. A sound digital infrastructure becomes really necessary for an effective deployment of AI, facilitating faster communication and sharing of data across the entire organization. Research indicates that companies with digital infrastructures further evolved experience better performance outcomes from employees (Khan et al., 2020).

For instance, those organizations that put up their resources in developing cloud and data-analysis platforms are better positioned to use AI capabilities; better decision making and improved employee performance are some of the by-products of such investment (Siddique et al., 2022). A bad digital infrastructure will, however, not support AI and create employee frustration and wastage.

Artificial Intelligence indeed offers great potential for improving productivity in industries, but also, organizations need to make their employees understand how to work with AI. Employees have to be trained on using AI-driven tools in ways that improve results rather than making many jobs obsolete.

Ultimately, some employees manage to learn the use of AI faster than others; the learning depends on the organizational structure. An employee may want to use AI for his/her work with the same identity as they hold while using it. AI can be narrowed down to the individual making use of the AI.

There are ways through which technology can help in the achievement of productive efficiencies. One is through replacing the human endeavor of performing repetitive or simple work.

By working to learn about and develop stories around AI and HCI within the public perception, it can produce more personalities, perspectives, or paradigms (in individual or group terms) through simulation or sceneries within story production.

The role of digital infrastructure in making artificial intelligence a reality is getting bigger by the day. It facilitates seamless communication and sharing of data anywhere across the organization. Hence, organizations would be better off investing heavily in digital infrastructures for AI compositions, as evidenced by research indicating that businesses with advanced digital infrastructures tend to produce better employee performance outcomes (Khan et al., 2020).

On the contrary, organizations investing in cloud computing and data analytics platforms are better positioned to leverage AI capabilities and, as a result, improved decision-making as well as enhanced productivity levels among their employee. Inadequate digital infrastructure can also deny the employee the capability of integrating AI, hence frustration and wastage of skills becoming the order of the day.

Most importantly, AI has a considerable potential to boost productivity across sectors. However, organizations must teach their personnel how to work with AI. Employees must also be trained to use the AI-driven tools in ways through which their work could be performed better instead of making many jobs go obsolete.

It will be seen after considerable time that some employees learn to use AI faster than others, but learning depends on organizational structure. One employee's work may assimilate AI into the same identity they hold while using it; others may want to keep their names and use AI in the same manner as they use themselves.

Technology can support productivity even in efficiency: by replacing human effort with repetitive and simple tasks.

This approach would work on producing more personalities, perspectives, or paradigms (in individual or group terms) through simulation or sceneries within story production by working to learn about and create stories around AI, and HCI public perception.

The role of digital infrastructure in making artificial intelligence a reality grows bigger day after day. It facilitates seamless communication and sharing of data anywhere across the organization.

Therefore, advanced digital infrastructures for AI compositions are worth great investments by organizations as research has been established showing that such businesses tend to produce better employee performance outcomes (Khan et al., 2020).

On the other hand, investing in cloud computing and data analytics platforms enables organizations to leverage AI capabilities for improved decision-making and enhanced productivity levels among their employees. An employee may wish to use AI in the same identity even as they utilize it for their work. AI can therefore be narrowed down to

### Identified Variables (Proposed)

On a study with objectives measuring the effect of artificial intelligence (AI) on employee performance and productivity, such variables can be identified as follows:

### Independent Variables:

1) AI Integration: The extent to which AI technologies are adopted and used within the organization.

2) AI Applications: These are specific AI tools and systems used (for example: automation).

3) Training Programs and Development: The training approach has been put in place to equip and sharpen learned skills for performing in the area of AI.

4) Organizational Culture: It is the perception of the values and norms held by organization members with respect to technology and innovation at the workplace.

5) Digital Infrastructure: the level of technological equipment and infrastructural development that exists to support the execution of AI.

### Dependent Variables:

1) Employee Performance: When evaluating an employee's effective productivity and efficiency on the job, or their overall job performance, you would find that AI affects all those measures.
2) Employee Productivity: Specific and quantifiable measures of one output as well as effectiveness due to AI implementation (sales figures, project completion rates).
3) Organizational Intelligence: The degree to which the organization is able to use data and information gained from its AI systems for enhancing its decision-making process and strategic planning.

### 3. Moderating Variables:

**1)  Job Displacement Fears:**

To what extent do concerns about job loss affect the attitudes and performance of employees in an organization?

**2) Ethical Aspects:**

The aspects of data privacy, algorithmic bias, and transparency which could be related to employee trust and engagement.

**3) Cultural Resistance:**

Resistance, as manifested in the cultural norms and practices, to the implementation of AI.

### *4. Control Variables:*

**1) Demographic Factors:**

Varied attributes including age, gender, educational level, and years of service that could affect employee responses toward AI.

**2) Sector of Employment:**

The specific select industry (e.g., IT, manufacturing, and agriculture) that the organization belongs to as different sectors may experience different impacts from AI.

All these variables provided examination framework about the complicate relationship that exists between AI integration and employee performance as a mediating process regarding actual organizational outcomes; hence allowing for a more nuanced analysis of the study objectives.

### Control Variables

Demographics like age, gender, educational level, and work duration will likely influence the extent to which employees respond positively or negatively to the integration of AI and performance metrics. Hence, it was suggested by the authors that younger employees who nowadays seem to be more tech-savvy may adapt to the changes brought about by AI technologies faster than older employees (Khan et al., 2020). Also, a contrary case is seen on considering the gender and educational background, for example, which would also shape how employees view and interact with the AI systems at work. According to a study, employees having a higher education level are more likely to be open to adopting new technology such as an artificial intelligence system (Siddique et al., 2022).

### Moderators

Concern regarding Job Displacement also acted as a significant moderator of the relationship between AI integration and employee performance. The anxiety occurs when employees believe that AI will take over their job and becomes a less driven and anxious employee. Thus, their behavior results in poor performance (Frey & Osborne, 2017). Organizations which better, proactive actions through open communication or action plans for reskilling reduce the adverse effects of displacement concerns.

Ethical Considerations also play an important role in moderating the relationship between AI and employee performance. Issues of data privacy and algorithmic bias take a chunk of employee trust away from the AI system (O'Neil, 2016). Consequently, when employees see AI as a threat in terms of privacy or fairness, engagement and performance obviously drop. Henceforth, organizations should focus more on ethics in deploying AI to create a more trust-filled workplace.

Similarly, cultural resistance also moderates the connection between AI inclusion and employee performance. In work cultures where traditional work practices are intensely embedded, adopting AI technology is resisted by their employees because they believe it's a potential threat to their jobs (Ali et al., 2021). Such reasons lead to poor performance and low productivity. Organizations should adopt change management strategies to counter the effects of cultural resistance and promote more positive attitudes toward the adoption of AI.

**Mediation Effects**

Mediated relationships exist between AI integration, training programs, and employee performance.

Training and Development Programs, serve as mediator variables of the effects of AI integration on employee performance by providing the right skills for employees to effectively use AI technologies (Bessen, 2019). Research shows that organizations with comprehensive training have experienced a more positive impact of AI on performance metrics (Khan et al, 2020).

It can also be suggested that Organizational Culture may configure a mediating variable in AI applications and employee productivity. A favorable culture that would promote innovation would make it more sensitive with AI applications and thus, improved productivity (Leicht-Deobald et

al., 2019). It indicates that training and culture are the important mediators of maximum possible benefits of AI integration.

**Theory Support**

**Technology Acceptance Model 2 (TAM2)**

Dubbed Technology Acceptance Model 2 (TAM2), this technology adoption theory inherits the legacy of the earlier Technology Acceptance Model developed by Venkatesh and his wife Davis in 2000, as it builds its argument on concepts related to perceived ease of use and perceived usefulness. It incorporates further variables that shape the phenomenon of accepting technology, with an emphasis on its succeeding application on organizational contexts.

The major components of TAM2 are:

1. Perceived Usefulness (PU): The extent to which a person believes using a particular technology would increase his/her job performance.

2. Perceived Ease of Use (PEOU): This refers to the extent to which using the technology is believed to be free of effort.

3. Social Influence: The extent to which people perceive that important others believe they should use the new system.

4. Cognitive Instrumental Processes: These types include

Ability to input relevance: The degree to which the technology is relevant to the individual's job;

Output quality: The quality of output produced by the technology;

Result demonstrability: The extent to which results from using a technology are visible and can be demonstrated to others.

Experience: Existing experience of users on similar technologies influences their acceptance toward future emerging technologies.

**Theory in practice**

**AI Integration and Employee Performance**

If the employees are using TAM2, this will provide a closer view on how employees treat AIs. Social influence, for example, could mean that attitudes are developed regarding particular AI tools for this specific example in a very collaborative environment.

## AI Applications

Different job roles have various perceptions of AI applications which can create situations when what output is produced will have an effect on the reception of the AI technology by individuals.

## Training and Development Programs

Training will improve the perception of easy effort and usefulness as in the case of the cognitive instrumental processes for the same depicted in TAM2. It is also a good source for increasing confidence in the use of AI technologies.

## Organizational Culture

Social influence may be fostered by an innovation- and feedback-inducing culture, which in turn could improve the acceptance of AI technologies.

## Digital Infrastructure

Well-organized digital infrastructure also advances quality and demonstrability in outputs of AI applications, therefore contributing to the perception of usefulness.

## AI Integration and Employee Performance

Designed for the employees using TAM2 to provide closer window views on how employees view AIs. For example social influence could mean that certain attitudes are being formed on specific AI tools in a very collaborative environment.

Different interpretations of AI applications as perceived in accordance with job roles and quality of output would vary between employees in using this technology.

Improvement of the perception of ease of effort and usefulness will occur from training as with the cognitive instrumental processes for the same cited in TAM2. It is also a good source for increasing confidence in the use of AI technologies.

**Organizational Culture**

The social influence part may be better assisted by an innovation- and feedback-inducing culture that could work well in acceptance of AI technologies.

**Digital Infrastructure**

Strong digital infrastructure also adds up the quality and demonstrability in outputs of AI applications thereby contributing to the perception of usefulness.

**Different role of perceptions: Applications of AI**

Different perceptions of applications of AI by different job roles would create situations wherein output would have effect with regard to the reception of this AI technology by individuals. It's about changing and normalizing training sessions.

**AI Integration and Employee Performance**

TAM2 is about providing a closer window view for employees utilizing it about how they view AIs. For example social influence may mean that certain attitudes are being formed on the specific AI tool in a very collaborative environment.

Applications of AI Different perceptions on application of AI depending on the job roles would create situations whereby the output would matter with regards to the reception of the AI technology by the different individuals.

**The Training and Development Programs**

Training increases the perception of easy use and usefulness as for the cognitive instrumental processes for the same as depicted in TAM2. It's a good added training source to increase the confidence in using AI technologies.

**Organizational Culture**

Social influence may be better facilitated by a culture fostering innovation and feedback that could, in turn, help the acceptance of AI technologies.

**Digital Infrastructure**

Strong digital infrastructure also adds up the quality and demonstrability in outputs of AI applications thereby contributing to the perception of usefulness.

AI Integration with Employee Performance

TAM2 will provide a closer view as to how employees use AIs. For instance, social influence could mean that attitudes form on specific AI tools within a very collaborative environment.

Different perceptions between various job roles would create situations: "Applications of AI." The effect of the quality of output in using this technology will vary between employees on the willingness to adopt it.

**Training and Development Programs**

Training will increase the perception of easy effort and usefulness just as with the cognitive instrumental processes for the same as mentioned in TAM2. It is also a good source for increasing the confidence of using AI technologies.

**Organizational Culture**

Such a culture would not only improve social influence but also acceptance of the use of AI technologies in the organization.

**Digital Infrastructure**

A robust digital infrastructure can also improve the output quality and result demonstrability of AI applications, thereby enhancing perceived usefulness

**Mediation and Moderation**

**Mediating Variables**

Just like its predecessor, the original TAM, TAM2 can also build in mediating and moderating variables:

That Employee Training and Development Programs will mediate the relationship of perceived ease of use and perceived usefulness whereby it affects employee performance in the end.

**Moderating Variables**

Job Displacement Concerns may intermingle cutting into the impact of social influence on technology acceptance. It is possible that under such circumstances when concerns over job security prevail, employees will not be influenced much by either their coworkers or their bosses concerning adopting AI in the organization.

Fairness may affect perceived usefulness and ease of use, particularly in instances where privacy of data is compromised.

## CONCLUSION AND RECOMMENDATIONS

Adopting artificial intelligence into the organizational frameworks significantly affects the employee performance, the productivity of the workforce as well as the overall intelligence of organizations. This literature review establishes the traumatic relations of the main independent variables, such as AI integration, application of AI and training and development programs, organizational culture, and digital infrastructure, to dependent variables, such as employee performance and productivity. Role moderating, such as job displacement concerns, ethical concerns, and cultural barriers, further complicated the understanding of workforce productivity: a more nuanced understanding needs to be built on research into how organizations can implement effective AI technologies.

The conclusions imply an organized manner of studying such relationships through quantitative research methodologies: with the Technology Acceptance Model 2 (TAM2), researchers are informed about the determinants of technology acceptance and usage at the workplace.

### Recommendations for Future Research

Development of Survey Questionnaire:     The structured survey questionnaire has to be designed to incorporate data from independent, dependent, and moderating variables sets in accordance with the framework. It should include validated scales for constructs like perceived ease of use, perceived usefulness, job displacement, and organizational culture concerning other variables. The items must be crafted ensuring clarity as well as relevance for the study, including Likert scale questions (to measure attitudes and perceptions) as well as demographic questions. 2. Sampling Strategy-Implement a stratified random sampling strategy to ensure diverse representation across different sectors and demographic groups. This would enhance the

generalizability of findings and allow for comparative analyses between different organizational contexts.

**Confirmatory Factor Analysis (CFA)**

Conduct CFA to validate the measurement model of the constructs identified in the study. This step is crucial to confirm that the items in the survey accurately reflect the underlying theoretical constructs, ensuring the reliability and validity of the data collected.

**Structural Equation Model (SEM)**

SEM will be applied to test the relationship of the variables proposed in the formulated hypotheses. S.E.M. analyses can analyze several different relationships and reveal whether those relationships are direct or indirect, clarifying how integration with AI impacts performance and productivity for the employee. Fit assessment of the proposed model will also validate that the hypothesized relationships are backed by data. Fit indices such as CFI, RMSEA, and SRMR should also be reported.

**Tests of moderators**

Demonstrate the moderating influences of job dislocation anxiety, ethical concerns, and cultural resistance in the relationship between AI integration and employee performance-the contextual determinants that can either promote or inhibit successful use of such technology in workplaces.

**Longitudinal Data Collection**

A longitudinal study would be undertaken to assess the changes that occur over time if possible. This explains how the views and performance adapt with increasingly integrating organizations into AI technologies.

**Policy and Practice Implication**

Practical recommendations for leaders of organizations would be derived from the findings of the study. This may include techniques for developing successful training programs, creating an innovative culture, and addressing ethical dilemmas of AI.

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