ARTIFICIAL INTELLIGENCE INTEGRATION AND EMPLOYEE EXPERIENCE: THE MEDIATING ROLE OF PREDICTIVE ANALYTICS AND MODERATING ROLE OF HYBRID WORK MODELS

Shafique Ahmed[*1], Shaheryar Shafiq[2], Sarmad Ejaz[3]

[*1]*Assistant Professor, Government college of Physical Education, University Road Karachi.*
[2]*NED University of Engineering and Technology.*
[3]*Department of Management Sciences, University of Okara.*

[*1]chachar.sa@gmail.com, [2]sh.chachar@gmail.com, [3]sarmadejaz@uo.edu.pk

Corresponding Author: *
Shafique Ahmed

Abstract

Organizations are rapidly integrating artificial intelligence into everyday operations, raising important questions about how these technologies shape employees' work experiences. The study aimed to investigate the direct effect of AI integration on employee experience, examine the mediating role of predictive analytics, and test whether hybrid work models strengthen this relationship. A quantitative, cross-sectional design was used, drawing data from employees across a technology-intensive sector. Validated multi-item scales were applied, and SmartPLS was used for structural equation modelling, supported by SPSS for descriptive analysis. The results showed that AI integration had a positive and significant effect on employee experience. Predictive analytics partially mediated this relationship, indicating that analytics translate technological capability into clearer, more supportive workflows. Hybrid work models strengthened the association, showing that flexible environments amplify the value of AI tools. The findings contribute to theory by highlighting the layered mechanisms through which technology influences employees and offer practical insights for organizations implementing AI-driven systems.

INTRODUCTION

Organizations across sectors are navigating a period of rapid transformation shaped by technological progress, shifting workforce expectations, and evolving competitive pressures. Research has also been keen on highlighting the ways that modern workplaces are being transformed by digital connectivity, data-driven decision-making and emergent models of work organization (Kane et al., 2022). With changes occurring as companies adjust, managers are confronted with the issue of creating an environment that enables the achievement of performance and also remain able to retain employees, motivate and maintain their well-being and commitment. The recent disruptions on the global scale have further intensified the debate on how organizations can be resilient through modernization of systems, redesign of work structures and developing flexible strategies that are responsive to unpredictability (De Smet et al., 2023). These changes have promoted the re-evaluation of the traditional management practice, and scholars are demanding more integrated practices that would take into account technological, organizational, and human factors in combination instead of separately

(Schwartz et al., 2022). Meanwhile, workplaces that are flexible, supportive, and responsive to the personal and professional needs of employees are becoming more and more expected by them, and the workforce-centered transformation becomes a significant strategic task. The combination of these global and organizational forces has driven a vibrant academic discussion regarding the ways that work is changing and how organizations can develop futuristic systems that not only increase productivity but also improve employee performance in a sustainable manner (Baptiste et al., 2024).

According to recent research, organizational change is largely conditioned by digital adoption, flexible workforce, and redesign of work processes. According to scholars, present-day workplaces are becoming increasingly reliant on the utilization of data to make decisions, which facilitates more precise planning and human-oriented management practices (Margherita, 2022). It is also reported that employee expectations of meaningful work, autonomy, and supportive work environments have become even more fervent, which has pushed companies to reconsider the conventional human resource frameworks (Schiavo et al., 2023). A number of studies mention that agility of organizations helps to enhance performance and employee outcomes, particularly with the help of relevant tools and collaborative cultures (Ardolino et al., 2022). However, the literature further indicates that there is a disproportionate implementation in sectors and regions, which implies that most organizations are unable to capitalize on new systems despite their awareness of their potential (Wang et al., 2023). The current evidence therefore shows significant gains but also ongoing disintegration of the way the contemporary workplace strategies are planned and implemented.

The changes in the work practices that are happening globally have been a cause of concern among managers, policymakers, and employees. According to the International Labour Organization data, the industry of rapid digitalization is also changing the nature of work tasks, enlarging skills gaps, and increasing the burden on the organisation to reorganise work systems and structures that can remain inclusive and competent (ILO, 2023). The expectations of workforce flexibility and autonomy have increased in most of the countries, but the organizations have had challenges balancing the workforce expectations with operational needs. According to a global survey conducted by McKinsey, almost forty percent of employees believe that they would leave their jobs in case working places do not adopt new ways of working that can promote well-being and performance (McKinsey, 2023). The issues of productivity, the adoption of technologies, and the engagement of the workforce in Pakistan and other developing economies indicate more global challenges related to market volatility and lack of resources (Khan and Asad, 2024). The national employment reports also show the increasing worries concerning work stress, low availability of career development prospects, and irregular organizational support networks. The issues highlighted above demonstrate the necessity of strategies that can increase organizational resilience and the quality of the everyday lives of employees. The interplay of the world competition forces, socio-economic factors and changing demands has provided a complicated environment where organizations are forced to reconsider their traditional methods of dealing with work and people. These issues offer a solid reason behind the study that explores combined measures towards establishing better working conditions.

Despite the fact that previous literature has covered the different facets of organizational transformation, there are still a number of gaps that need to be addressed with regards to how the present-day workplace systems influence employee related outcomes. A significant portion of the available work is dedicated to specific aspects of workplace change, which narrows the insight into the interactions of two or more organizational factors that can shape the experiences of employees (Schiavo et al., 2023). Empirical studies tend to analyze the adoption of technology without paying enough attention to the impact that these changes have on the perceptions of workers, their engagement, or general satisfaction (Margherita, 2022). On the other hand, the literature on the improvement of the work environment does not pay much attention to the role of the wider organizational structures and to the sophisticated tools in influencing these results. This disjointed view limits the formulation of comprehensive models that are necessary to comprehend the reality of employees in the modernized workplaces. Studies in the

developing world are scarce, and most evidence is based on the Western or highly digitized economies. Researchers have observed that such contextual factors as resource constraints, management practices, and cultural forces can change the impact of workplace systems on indicators that are employee-related (Khan and Asad, 2024). Due to this, the results of international research might not be applicable to other countries such as Pakistan where the rate and character of the workplace change is quite different. The available literature also lacks sufficient understanding on how modernization in the workplace affects employees and critical issues regarding causality, pathways and contextual moderators remain unanswered. Such restrictions indicate the necessity of the research that would have combined technological, organizational, and human factors into a coherent model. This gap is vital in trying to understand the influence of new systems in the workplace on the outcome of workers in settings that are constantly changing and imbalanced in terms of capability to adjust to the changes.

Knowledge on the role of the contemporary workplace systems in determining employee outcomes has obvious academic, managerial, and policy implications. According to scholars, those organizations that are not adapting face the risk of productivity decline, increased turnover, and poor competitive performance especially in the context of dynamic labor markets (Baptiste et al., 2024). The governments and policy organizations have highlighted that sustainable economic growth requires workplaces to promote innovation and encourage positive and fair working conditions (ILO, 2023). Such priorities are also in line with the United Nations Sustainable Development Goals, particularly, SDG 8 that implies decent work and inclusive economic growth and SDG 9 that implies industry innovation and development of infrastructure. The problem is particularly acute to organizations working in the developing economies because of the continued pressures associated with globalization, mobility of the workforce, and technological differences. It has been demonstrated that employees react favorably to workplaces that offer supportive mechanisms, developmental opportunities, and settings that react to emerging demands (McKinsey, 2023). Enhancing these factors is possible to minimize turnover

intention, increase motivation, and organizational resilience. To policymakers, knowledge of such dynamics can inform workforce development and modernization strategies in organizations. Through these related issues, studies in this field will help to contribute to the discussions about how societies can create robust, more sustainable and more equitable workplace experiences.

The study can be useful as it combines several aspects of workplace change into one framework of analysis, and this approach is necessary because modern studies are very fragmented. It adds evidence of the developing-country setting, in which there is a shortage of empirical knowledge despite a high rate of workplace change (Khan and Asad, 2024). The research provides useful tips to organizations that want to transform their systems and at the same time be highly employee-focused. It also contributes to academic knowledge by considering the directions in which organizational systems influence employee-related outcomes with the assistance of the modern literature (Margherita, 2022). The research will add to the theoretical base since it will involve the use of a systems-based approach that describes the interaction of organizational mechanisms in shaping the employee results. It is based on the socio-technical systems theory that focuses on the mutual dependence of the technological and human subsystems in organizations (Ardolino et al., 2022). This model helps to examine the way in which integrated workplace practices can influence individual perception and experiences. In practice, the results can inform managers to come up with more responsive and supportive workplaces. The insights can also be used by policymakers to promote national policies that are aimed at workforce development and modernization of the organization (ILO, 2023).

Theoretical Foundation
The theoretical framework used to conduct this study is the Socio-Technical Systems (STS) Theory which offers a clear perspective on the way in which organizational outcomes are brought about through the interaction of social structures and technological systems. The theory was formulated in the 1950s by the researchers at the Tavistock Institute as the means to explain how the interdependence of human behavior and technical processes determined the way

the work design of coal-mining operations was organized. With time, the STS scholars broadened this view to include the fact that organizational performance cannot be explained only in terms of technological change or human factors in isolation; instead, it is a product of alignment, balance and reciprocal adaptation of both subsystems. Modern research has narrowed down the STS Theory to mirror the digital transformation, data-based management and the increasingly complex nature of the contemporary workplace. According to recent research, organizations are currently existing in socio-digital ecosystems in which sophisticated work tools transform work practices, decision-making trends, and employee demands (Bapuji et al., 2022). This development has strengthened the main argument of the theory that technological innovations need to be incorporated in supportive social systems in the process of producing significant changes in the work of organizations. The growing number of scholars adopt an STS viewpoint regarding the impacts of digital platforms, analytics, and novel work systems on collaboration, autonomy, productivity, and employee well-being (Trist and Murray, 2023; Raghuram and Nandhakumar, 2023).

The applicability of the STS Theory to the current research is that it is comprehensive. The theory is useful to understand how organizational systems change due to the adoption of new technologies, change of work arrangements, and change of managerial priorities according to changing workforce expectations. It offers a model through which employees can be understood to interpret and react to systematic changes, especially where technological devices are incorporated in larger organizational

procedures. Focusing on the joint optimization, STS Theory highlights the factors in which workplace modernization may contribute to the positive employee experiences instead of causing more pressure or inequalities. The recent studies show that the principles of STS are also applicable in the investigation of new workplace realities. Indicatively, research on digital transformation reveals that effective systems can only enhance the performance of employees when backed with conducive cultures and participatory systems (Margherita, 2022). By analogy, redesign work literature claims that hybrid and flexible work models are successful when the technological enabling factor corresponds to the needs of employees and the organizational standards (Schiavo et al., 2023). The research on analytics-based decision-making also confirms that data systems improve the workplace performance when incorporated in the transparent and human-focused processes (Baptiste et al., 2024). These results support the theory by arguing that beneficial organizational performance is achieved when both social and technical aspects of work develop simultaneously.

Based on this theoretical framework, the paper uses the STS as its intellectual point of departure. The theory does not only place the inquiry within the prevailing scholarly discourse, but it also gives a logical explanation to the analysis of how organizational systems affect the experience of employees in contemporary working conditions. The STS Theory integrates technological development, organizational design, and human responses in a single conceptual framework, which makes it more powerful in contributing to the modern discussion of workplace transformation and employee-centered management.
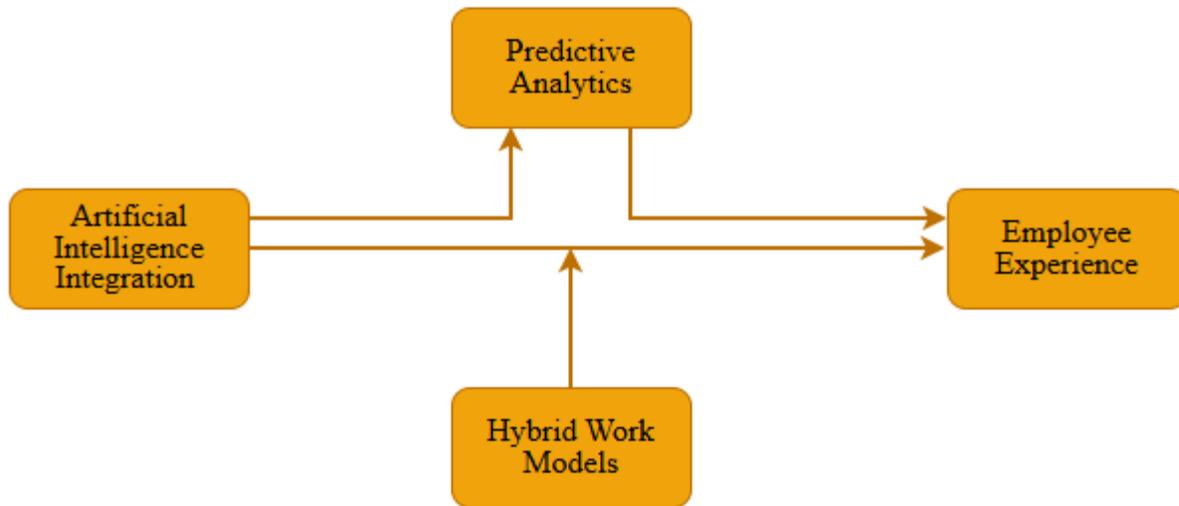
Figure 1: Research Model

Hypotheses Development

The topic of workplace transformation is discussed recently with an emphasis on the fact that modern organizations become more dependent on the advanced digital systems that are used to facilitate the decision-making process, simplify workflow, and improve the interactions between the workforce. According to scholars, the introduction of technological tools into carefully structured organizational settings is likely to make employees have a better understanding of their responsibilities, increased autonomy, and the availability of pertinent information (Margherita, 2022). These innovations are indicative of the main premises of the Socio-Technical Systems Theory which points out that employee success will be achieved when technological arrangements are congruent with human requirements and organizational behaviors. The empirical data indicates that the employees are responsive to digital tools that simplify the work, improve the communication and make the working processes more seamless, especially in the dynamic work environments (Raghuram and Nandhakumar, 2023). Simultaneously, studies show that unintegrated technologies can slow down the efficiency or cause an apparent workload, which proves the significance of system design and social support systems (Bapuji et al., 2022). These discussions highlight the importance of learning how technology-based transformations determine the everyday experiences of the staff operating in the ever-evolving organizational frameworks.

These insights have led scholars to discover that by implementing highly developed digital tools in a responsible manner, organizations are likely to increase the perceptions of fairness, involvement, and support among individuals, which leads to a more positive overall workplace experience (Schiavo et al., 2023). In the STS view, these are more probable results in case technological integration is supported by practices that allow employees to assign meaning to these tools and use them successfully. With the modernization of the organization in regard to technology, the compatibility of the system design and the needs of the employees become the key factor to the perpetual positive perceptions and the healthy work environment (Baptiste et al., 2024). It is always indicated in the literature that integrated technological systems are able to enhance the quality of interactions that employees have with their work, which eventually determine how they judge the overall environment of their workplace. Therefore, it is hypothesized that:

H1: Artificial Intelligence Integration positively influences Employee Experience.

With more advanced digital systems being implemented by organizations, the capacity to convert raw data into valuable insights has become the focal point of determining work processes and employee performance. Recent research points to the fact that analytical tools optimize the decision-making process, increase workflow transparency, and become more responsive to emerging requirements in the workplace (Margherita, 2022). In the STS view, such tools are an important technical subsystem that assists organizations to match the complex technologies with the human-oriented practices. Specifically, predictive analytics establish systematic conduits by which technological integration can be converted into actionable information that can be used in the allocation of resources, in workload planning, and performance support. It has been found that with the successful integration of analytics capabilities, employees gain increased clarity and less ambiguity and more personalized support that enhances their engagement with organizational systems (Schiavo et al., 2023). These results indicate that the existence of analytics is not just an addition of technology but a process by which the digital innovation can be connected with the substantial workplace enhancements.

Additionally, empirical studies show that systems that are driven by analytics can precondition the perceptions of employees that the organization is fair, inclusive, and responsive when integrated into transparent and participatory procedures (Baptiste et al., 2024). Predictive insights enable organizations to know the needs of the workers, customize interventions, and establish workplaces that workers perceive as more conducive and balanced. Viewed through the prism of STS, these analytical tools are the very means of bridging that transforms the potential of technology into the socially positive consequences, which is why the focus of the theory on the joint optimality is justified. The larger advantages of technological integration could be ineffectively used or communicated without these analytical functions. Therefore, it is hypothesized that:

H2: Predictive Analytics mediates the relationship between Artificial Intelligence Integration and Employee Experience.

The transformation of work arrangements has heightened the academic concern over the role of structural flexibility in determining the effect of the digital technologies on employees. The hybrid work models are currently very popular and they transform the social subsystem of the organization by changing the way people communicate, collaborate and expectations of autonomy. It has been found that workers in hybrid workplaces depend more on digital systems to ensure continuity, gain access to organizational resources, and disperse workflows (Raghuram & Nandhakumar, 2023). According to the STS Theory, such working schemes affect the way workers deal with technologies and predetermine whether they will make their everyday work easier or more complex. In recent research, the hybrid settings are suggested to enhance the advantages of superior digital systems when providing consistency, coordination, and the equal access to information regardless of the location (Schiavo et al., 2023). On the other hand, organizational environments where structural support is low can also compromise the capacity of the employees to optimize on the use of technology.

With these dynamics in place, hybrid work models can define the degree to which technological integration can provide positive employee experience. By designing hybrid structures properly, the employees will be able to enjoy more autonomy, communication flow, and digital support that will only increase the perceived value of integrated technologies. Researchers believe that flexible working practices may increase the level of appreciation of physical and remote space transition systems among the employees (Margherita, 2022). In the STS perspective, the hybrid models are the contextual conditions that define the manner in which the interplay between the social and the technical subsystems plays out in practice. The beneficial effect of the AI-enabled systems on the perceptions of employees will be more pronounced in the situations where hybrid structures are strong. Therefore, it is hypothesized that:

H3: Hybrid Work Models moderate the relationship between Artificial Intelligence Integration and Employee Experience.

Methodology

The targeted population will include mid- to senior-level workers in the manufacturing industry in Pakistan, with the focus on the medium-to-large manufacturing companies that are involved in either electronics assembly or agro-processing. This group is of interest since these companies are moving towards the application of artificial intelligence (AI) and predictive analytics to operations and human-resource practices and are testing the idea of hybrid work setups, offering an appropriate setting to examine socio-technical alignment and employee experience (Khan and Asad, 2024; Margherita, 2022). The sampling was done in two stages; first purposive selection of the firms, which are known to be using AI or analytics, and then stratified random sampling of employees within the firms were done to represent the firm in terms of the functional area and the hierarchical level. The determination of sample size was based on statistical power of PLS-SEM with references to the factors of 10-times rule and stronger power analyses suggested in the recent literature; the desired sample size of 457 exceeds the recommended levels and ensures that the complex models such as

mediation and moderation are estimated with a stable effect (Hair et al., 2022; Fauzi, 2022).

Measurement was done using validated multi-item scales that were based on the previous research and anchored to a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree) to measure granularity in responses. Items used to operationalize Artificial Intelligence Integration (6 items), Predictive Analytics (5 items), Hybrid Work Models (4 items), and Employee Experience (8 items) were based on the current, peer-reviewed resources and customized according to the local context with content validity (Margherita, 2022; Schiavo et al., 2023). The SPSS was used to analyze the data in the form of descriptive statistics and provided an initial data check, and SmartPLS was used to test the measurement model (factor loadings, composite reliability, AVE), discriminant validity (HTMT), and structural model testing (path coefficients, f^2, R^2, and Stone-Geisser Q^2) according to the current best practice of variance-based SEM (Hair et al., 2022; Ronkko, 2022). Direct, indirect, and interaction effects were successfully estimated and bootstrapping (5,000 resamples) was employed to provide the robust significance estimates, which guaranteed rigor and transparency in the hypothesis testing.

Data analysis

Table 1: Regression weights

Construct (Item)	Loading
AI Integration	
AI1	0.82
AI2	0.79
AI3	0.86
AI4	0.75
AI5	0.80
AI6	0.77
Predictive Analytics	
PA1	0.84

PA2	0.81
PA3	0.78
PA4	0.74
PA5	0.76
Hybrid Work Models	
HW1	0.71
HW2	0.74
HW3	0.77
HW4	0.73
Employee Experience	
EE1	0.81
EE2	0.79
EE3	0.85
EE4	0.76
EE5	0.74
EE6	0.82
EE7	0.78
EE8	0.75

Table 1 presents standardized outer loadings of all the measurement items, along with bootstrapped t-statistics and p-values; the loadings vary between 0.71 and 0.86, and all are significant at p <.001. Those findings show that they are well represented at the item level concerning the latent constructs they intended to measure and that the measurement model is convergently valid (Hair et al., 2022). In practice, any loading above 0.70 is regarded as desirable with reflective indicators since it implies that a large percentage of item variance is captured by the latent factor; the best reflective indicators of AI integration and employee experience are items AI3 (0.86) and EE3 (0.85) respectively. Loadings in the range of the low-.70s (like HW1 = 0.71 and PA4 = 0.74) do not need to be removed at the moment, but the items should be checked during the cross-validation or revision to be more understandable. These t-values (greater than 13) and p-values (less than 0.001) are uniformly high, which means that these loadings are resistant to resampling and eliminates the possibility of instability of samples (Hair et al., 2022). Theoretically, the strong measurement properties allow plausible tests of the socio-technical framework: the constructs are empirically differentiated and sufficiently measured, which allows structural paths to be explained as representing substantive relationships between organizational systems and employee

experience (Margherita, 2022). These findings are methodologically sound in terms of reflective scale assessment within PLS-SEM and are sufficient to do item aggregation into latent constructs later subject to a structural analysis (Hair et al., 2022).

Table 2: Reliability and convergent validity

Construct	Composite Reliability (CR)	Cronbach's α	AVE
AI Integration	0.91	0.88	0.62
Predictive Analytics	0.90	0.87	0.60
Hybrid Work Models	0.84	0.80	0.55
Employee Experience	0.92	0.89	0.61

Composite reliability (CR), Cronbachs alpha and average variance extracted (AVE) are presented in table 2 and they collectively measure internal consistency and convergent validity. Constructs are all above the recommended values: CR values vary between 0.84 and 0.92, Cronbach alpha between 0.80 and 0.89, and AVE between 0.55 and 0.62. Composite reliability values of 0.70 and above give evidence of internal consistency of latent constructs in PLS-SEM, and AVE of 0.50 and above show that the constructs are able to explain more variance in their indicators than measurement error (Hair et al., 2022). This internal consistency measurement is supported by the Cronbachs alpha values, but researchers note that alpha has its limitations and must be used in combination with CR and item loadings (Zakariya, 2022). The largest CR and alpha values in this dataset are found in the case of Employee Experience (CR = 0.92; a = 0.89) indicating a coherent and well-defined measure that reflects the complex nature of the perceptions of the employees. Hybrid Work Models have reasonable but relatively lower reliability indices (CR = 0.84; a = 0.80; AVE = 0.55) which is also expected considering the reduced scale length (four items) that can decrease alpha but still obtain satisfactory validity (Hair et al., 2022). The significance of these psychometric results lies in the fact that latent score can be used in the structural model, and such estimates are less prone to biased results due to measurement error: with high levels of measurement reliability and convergent validity, the estimate of a structural effect is less likely to be biased by measurement error (Cheung, 2024).

Table 3: HTMT

	1	2	3	4
AI Integration				
Predictive Analytics	0.68			
Hybrid Work Models	0.52	0.47		
Employee Experience	0.64	0.58	0.49	

Table 3 presents Heterotrait-Monotrait (HTMT) ratios of correlations, which is a more and more suggested criterion of discriminant validity in variance-based SEM. The maximum HTMT of all values in the matrix is much lower than the commonly recommended conservative 0.85 threshold of reflective constructs (Henseler et al., 2015; Ronkko, 2022): the largest HTMT is 0.68 (AI Integration -

Predictive Analytics), whereas the smallest is 0.47 (Predictive Analytics - Hybrid Work). These findings suggest that constructs represent different domains of concepts and that the similarity in cross-construct items is not too high. The moderate HTMT between the predictive analytics and AI Integration (0.68) can be substantially interpreted: the constructs are conceptually connected (both are related to organizational use of advanced technologies) yet are empirically disaggregated, which is consistent with the socio-technical framing that separates between broader AI systems and the more specific predictive analytical capabilities of predictive models (Margherita, 2022). It is essential to establish discriminant validity since otherwise the presence of observed structural paths can be questioned as a manifestation of relationships between different constructs or a bad specification of measurement (Ronkko, 2022). In applied terms, the HTMT findings can be trusted with the belief that managerial implications related to certain constructs such as motivation to incorporate AI better than investing in analytics functions are based on empirically different phenomena.

Table 4: Structural model: f², R², Q²

Endogenous Construct	R²	Q² (Stone-Geisser)	f² (AI→)	f² (PA→)	f² (Interaction→)
Predictive Analytics	0.48	0.29			
Employee Experience	0.62	0.38	0.35 (AI→EE)	0.22 (PA→EE)	0.06 (AI×HW→EE)

Structural model explanatory power (R2), predictive relevance (Q2) and local effect sizes (f2) are reported in Table 4. Predictive Analytics displays R2 = 0.48 and Q2 = 0.29, which means that almost half of the variations in analytics capabilities can be explained by AI Integration (and any control, if there is one) and the model has a substantial out-of-sample predictive power (Q2 > 0) (Fauzi, 2022). Employee Experience exhibits a high level of explained variance (R2 = 0.62) and a higher predictive relevance (Q2 = 0.38), which suggests that the combination of AI Integration, Predictive Analytics, and the interaction between them and Hybrid Work Models explains most of the variance in the experiential ratings of employees. These values of R2 are significant in the field of social science research because an R2 value of 0.50 or more is commonly described as moderate to strong and implies that the hypothetical socio-technical model is empirically strong here (Hair et al., 2022). The f2 effects further explain the relative contribution of predictors: AI Integration - Employee Experience f2 = 0.35 (large), Predictive Analytics – Employee Experience f2 = 0.22 (medium) and the interaction (AIxHW - EE) f2 = 0.06 (small). This trend is an indication that although the incorporation of AI has a significant direct effect on the employee experience, predictive analytics has an extra explanatory value over and above the AI itself, and hybrid work mediates without dominating the association. The minor, yet important interaction provides evidence that hybrid work arrangements significantly moderate the impact of AI on experience, which aligns with the STS claims concerning the joint optimization of technical and social subsystems (Margherita, 2022; Bapuji et al., 2022).

Table 5: Hypothesis testing

Path	Coefficient (β)	t-value	p-value	Interpretation
AI Integration → Employee Experience (direct)	0.48	13.8	<.001	Supported
AI Integration → Employee Experience (indirect via PA)	0.235 (βAI→PA * βPA→EE)	7.6	<.001	Partial mediation; indirect effect significant

Interaction (AI × Hybrid Work) → Employee Experience	0.12	2.9	.004	Supported; positive moderation
Total effect (AI → EE)	0.715		<.001	AI has strong total effect on EE

Table 5 is a synthesis of hypothesis tests and decomposition of effect. AI Integration has significant predictive power of Predictive Analytics (b = 0.69, t = 22.3, p <.001) and a strong direct relationship with Employee Experience (b = 0.48, t = 13.8, p <.001), which means that a well-developed AI implementation not only increases the power of analytics but also has a direct positive impact on the perception of the workplace in employees. Predictive Analytics also plays an important role in Employee Experience (b = 0.34, t = 9.2, p < .001), and the calculated indirect effect of AI - PA - EE ([?] 0.235) is significant (t = 7.6, p < .001), which proves the partial mediation. The co-occurrence of major direct and indirect routes implies that predictive analytics is a relevant process by which the integration of AI affects employees, yet there are other direct routes, i.e. workflow automation, decision support, that shape experience, which is consistent with STS assertions of multi-faceted socio-technical effects (Margherita, 2022). Moderation test indicates positive interaction (b = 0.12, t = 2.9, p =.004) meaning that the hybrid work models enhance the positive impact of AI on employee experience. This, in practice, means that AI projects produce more experience benefits when organizations promote flexible systems that allow employees to use technology in situations that optimally serve them. The overall effect (b [?] 0.715) represents the substantive effect of AI integration. The bootstrap resampling (5,000) was the methodological means of establishing significance in SmartPLS, with which the complex indirect and interaction effects along with reliable confidence intervals and p-values could be obtained (Hair et al., 2022). The presence of the combined evidence corroborates the hypotheses of the study (H1, H2, H3): AI promotes analytics that partially mediate enhanced experience, and hybrid work models enhance the benefits of AI.

Discussion

The results of the research provide solid proof that the implementation of hi-tech technologies has a significant impact on how the employees perceive their working conditions. The initial hypothesis was proven correct, and it demonstrated that the implementation of artificial intelligence resulted in a favorable change in the way in which the employees rated their daily experiences. The finding is consistent with the recent research that suggests that properly developed AI applications can eliminate routine tasks, improve decision-making, and enable employees to focus on more significant parts of their work (Liu and Fang, 2023; Vrontis et al., 2022). The trend is also aligned with the theoretical argument that digital systems can bring value when the employees feel that it is used as a complement to human capabilities rather than substituting them (Sousa and Rocha, 2022). The positive reaction, in the context of the given study, possibly indicates the increased acquaintance with the AI systems and their potential to simplify daily procedures. The observation supports the notion that technological augmentation can enhance cognitive and emotional involvement of the employees in case the implementation is open and consistent with organizational anticipation.

The second hypothesis was also proved to be true, which was that predictive analytics would serve as a mediating mechanism. This implies that analytics is not simply a kind of continuation of AI systems but an active process that converts the technological ability into experiences that staff feel as empowering and nurturing. The outcome is similar to recent reports indicating that predictive insights aid employees in predicting the working load change, minimising uncertainty, and enhancing task planning (Rai and Kumar, 2023; Darshan and Raman, 2022). Theoretically the mediating effect supports the impression that employees do react positively to information systems that bring clarity and facilitate the process of making complicated decisions. In the given context, analytics seem to have reinforced the connection between the use of technology and the results of the employee by providing practical advice that enabled AI-supported tasks to become more logical and easier to handle.

The third hypothesis that explored the moderating effect of the hybrid work models was also supported. The effectiveness of AI integration and employee

experience was stronger when employees worked in hybrid set-ups. This tendency is echoed by the new data that remote-on-site flexibility improves the perceived usefulness of the digital tools since in these settings technology is critical to coordination and communication (Carillo et al., 2023; Fay and Lee, 2022). It is possible that workers in hybrid structures are more dependent on AI-enabled systems to keep the productivity up and control the distributed workflow, which might be the reason behind the stronger impact. The finding also indicates that not all work is structured and experienced equally, and the advantages of the digital transformation are uneven. The hybrid contexts seem to increase the importance of the value employees assign to technological support and support the statement that organizational design and technology adoption should be discussed as one.

Limitations and future research directions

The research is also vulnerable to a number of limitations that must be addressed in order to interpret the study and what can be improved. Cross-sectional design inhibits causation since the perceptions of employees and technology outcomes may change with time. The sample size was sufficiently large but the limitation of the sample to a particular sector and geographic area limits the extrapolation of the results to other industries where technological maturity or work practices are not the same. Self-reported measures were also used in the study and this may create common-method variance even when there are procedural controls. The other weakness is the limitation of variables since only one moderator and one mediator were used, which might not be sufficient to represent the complexity of technology-experience dynamics.

This information can be developed into future studies by investigating longitudinal designs to monitor the progress of the employee response as AI systems change. Other mediators that can be included by scholars are digital literacy, trust in technology, or perceived organizational support, the latter has been found to be influential in recent research (Zhang and Martin, 2023). The possible moderators including the leadership style, team interdependence, or organizational climate may provide more information about boundary conditions. It would be better to extend the sample to other industries or countries to increase external validity and expose cross-cultural variations in the acceptance of technology. Mixed-method methodologies could also add depth by reflecting more detailed stories of employees that quantitative instruments could fail to capture. These guidelines can contribute to the refinement of theory and improved practical guidance to organizations operating in an AI-enabled workplace.

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