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GENERATIVE AI ADOPTION AND EMPLOYEE PERFORMANCE: THE MEDIATING ROLE OF DIGITAL COMPETENCE

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Abstract
Generative artificial intelligence (GenAI) has become common workplace infrastructure faster than almost any digital technology before it, moving from experimental novelty to everyday workplace infrastructure, yet a critical question remains underexplored in the Indian organisational context: do GenAI tools actually make employees perform better or does that depend on something else entirely – how digitally competent the employee already is? We examine whether digital competence is the missing link in explaining when and for whom the adoption of Generative AI translates into measurable performance gains.
Data were collected from 500 employees working in multinational companies located in major Indian business hubs of Bengaluru, Hyderabad, Pune, Gurugram/NCR, Mumbai and Chennai using a quantitative, cross-sectional survey design. The suggested model Generative AI Adoption →
Digital Competence → Employee Performance was tested using a full analytical pipeline, including descriptive statistics, Cronbach's Alpha,
Composite Reliability (CR), Average Variance Extracted (AVE), Confirmatory Factor Analysis (CFA), correlation analysis, independent-samples t-tests, one-way ANOVA, multiple regression,
Structural Equation Modeling (SEM), and bootstrapped mediation analysis.
The Findings (reported here on an illustrative dataset, to be replaced by the primary data) suggest that the adoption of Generative AI is
significantly and positively associated with digital competence, that digital competence is significantly and positively associated with employee performance, and that digital competence partially mediates the relationship between the adoption of GenAI and performance. The T-test and ANOVA results also suggest that the strength of this chain varies significantly by sex, organisational tenure and job role, indicating a more nuanced, skills-dependent adoption story rather than a homogenous productivity dividend.
The findings suggest that Indian subsidiaries of multinationals should focus on digital-competence development, rather than just tool deployment, as the strategic lever to convert GenAI investment into performance results, with a particular focus on tenure-based and role-based upskilling gaps. The current study is among the first integrated SEM-based tests of digital competence as a mediating mechanism in the GenAI–performance relationship within India's multinational corporate workforce, a fast-growing, strategically important, yet empirically under-examined segment of the global GenAI adoption story.
Keywords: *Generative Artificial Intelligence, Digital Competence, Employee, Performance Technology Adoption, Structural Equation Modelling, Multinational Corporations India, Future of Work*

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1. Introduction

1.1 Background of Study

India is now one of the most meaningful test beds for enterprise generative AI in the world, not mainly as a builder of foundation models but as the home of the largest number of multinational Global Capability Centres (GCCs), IT-services delivery hubs and shared-services operations on the planet. In these centres Microsoft Copilot, ChatGPT Enterprise, Google Gemini, GitHub Copilot and a growing list of bespoke internal GenAI copilots have gone from pilot programmes to standard-issue productivity tools within the space of a single budget cycle. Indian employees at multinationals are, in effect, on the front lines of a live global experiment in human-AI collaboration, and the results matter far beyond India's borders, given the country's central role in global delivery models for technology, finance, consulting and business-process outsourcing.

Against this backdrop, a deceptively simple but strategically urgent question has emerged among HR leaders and Chief People Officers in India's MNC sector: is it the GenAI tool itself delivering performance gains or is it the employee's digital competence — their comfort, fluency and self-efficacy with digital tools which actually determines whether adoption converts into performance? Anecdotal evidence from industry forums and surveys of HR practitioners suggests huge within-organisation variance in how well employees use the same GenAI tools. Adoption is an incomplete predictor of outcomes.

1.2 Problem Formulation

Across India's MNC universe, organisations are pouring money into GenAI licences, rollout programmes and prompt-engineering training, largely on the assumption that adoption itself drives performance. But this is a black-box logic: it does not explain the mechanism of how using AI tools leads to better employee output. If they don't understand the mechanism, organisations risk investing too much in access to tools, but too little in the underlying digital capabilities that could be the real performance lever. That's a costly strategic blind spot, given how much is being spent on GenAI across Indian GCCs and MNC subsidiaries.

1.3 Research Gap

This study is driven by three gaps. Second, the growing body of literature on GenAI and workplace outcomes is largely North American and Western European centric, with India's unique MNC workforce – large, English-proficient, highly educated, but structurally diverse in terms of digital readiness across tenure and role – comparatively under-researched. Second, existing studies tend to model the adoption of GenAI as directly predicting performance without formally testing digital competence as the mediating mechanism through which adoption translates (or fails to translate) into performance gains. Third, there is a shortage of studies combining a full validated measurement pipeline (reliability, convergent and discriminant validity, CFA) with correlational/regression techniques as well as full SEM-based mediation testing. This limits the methodological rigor and cross-study comparability of findings in this fast-moving research area.

1.4 Research objectives

1.To examine the relationship between Generative AI adoption and employee performance among employees of multinational companies operating in India.
2.To examine the relationship between Generative AI adoption and digital competence.
3.To examine the relationship between digital competence and employee performance.
4.To test whether digital competence mediates the relationship between Generative AI adoption and employee performance.
5.To examine whether the study variables differ significantly across demographic and organisational subgroups (gender, tenure, job role) using t-tests and ANOVA.

1.5 Research Questions

•RQ1: Does Generative AI adoption significantly predict employee performance in Indian MNC settings?
•RQ2: Does Generative AI adoption significantly predict employees' digital competence?
•RQ3: Does digital competence significantly predict employee performance?
•RQ4: Does digital competence mediate the relationship between Generative AI adoption and employee performance?
•RQ5: Do gender, tenure, and job role significantly influence GenAI adoption, digital competence, or employee performance?

1.6 Contribution of the Study

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This study contributes a theoretically grounded, empirically rigorous, India-specific account of how Generative AI adoption translates into employee performance, positioning digital competence as the central, testable mechanism rather than treating GenAI as a simple plug-and-play productivity input. Methodologically, it offers a complete, reusable analytical template — spanning reliability/validity testing, CFA, correlation, t-test, ANOVA, regression, SEM, and bootstrapped mediation — for scholars studying GenAI adoption in emerging-market MNC contexts. Practically, it gives HR and L&D leaders in India's MNC ecosystem an evidence base for shifting investment from tool licensing alone toward structured digital-competence development as the lever most likely to convert AI spend into performance outcomes.

2. Review Of The Literature

2.1 Theoretical Approaches

The study of workplace technology adoption has long distinguished between the act of adopting a tool and the ability to use it effectively. This distinction was made early in information-systems research in terms of computer self-efficacy and end-user computing satisfaction; the later digital-competence literature extended this logic to the broader bundle of skills – information literacy, communication, problem-solving, and content-creation skills in digital environments – required to convert technology access into productive use. The arrival of generative AI has sharpened rather than weakened this distinction: Unlike earlier enterprise software that followed largely fixed input-output logic, GenAI tools are conversational, generative, and probabilistic, rewarding users who can frame problems clearly, iterate on prompts, and critically evaluate AI-generated output — skills that map closely onto established digital-competence frameworks such as the European DigComp framework and its many adaptations in workplace research.

2.2 Use of Generative AI in Organisations

There is an expanding literature documenting the diffusion of generative AI across knowledge-intensive sectors, which consistently points to the importance of perceived usefulness, organisational mandate or encouragement, peer usage norms, and increasingly, competitive pressure in fast-moving sectors such as IT services and global business services. Specifically in India, the GCC and IT-services sector has been an early and aggressive adopter of GenAI copilots for coding, documentation, customer-support and knowledge-management tasks, driven by both global headquarters mandates, as well as local cost-and-quality competitive pressure. However, some practitioner and academic studies have shown that the intensity of adoption varies significantly with role, seniority and previous exposure to digital . This pattern provides the rationale to focus on digital competence as a conditioning variable in this study.

2.3 Digital Competence as a Work Capability

Digital competence is widely understood as a multidimensional competence comprising technical competence (the ability to use digital tools), informational competence (the ability to find, evaluate and integrate digital information), and adaptive competence (the ability to learn and use new digital tools as they emerge). Within the context of GenAI, scholars increasingly point to a fourth, more specific dimension — AI-interaction literacy — which includes the ability to formulate prompts, check outputs, and calibrate trust appropriately (i.e., know when to trust and when to override AI output). Employees with high digital competence will be able to derive significantly more value from any GenAI tool than employees with the same access to the tool but lower competence, as they will be able to frame better prompts, iterate faster, and better judge when an AI output needs to be corrected.

2.4 How Employees Operate in an AI-AugmentedWorkplace

In modern HR research, employee performance is often broken down into task performance (effective performance of core job tasks) and contextual or adaptive performance (effective behaviour outside of formally prescribed tasks, such as adaptability to new tools and processes). Empirical studies of AI-augmented work consistently find that performance gains from AI tools are not automatic, but rather depend on the fit between the tool, the task, and the user's ability to direct and interpret the tool's output. This nuance is especially pertinent in the context of India's MNC and GCC landscape where the roles range from highly technical (software engineering, data analytics) to process-oriented (transaction processing, customer support) suggesting a high degree of variance in the ease with which GenAI adoption translates to productivity gains across the workforce.

2.5 Digital competence as a mediator

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But there is a smaller, though in principle important, stream of literature which argues that the relationship between technology adoption and performance is not normally direct. Rather, technology adoption creates or activates a capability - here digital competence - that is the more proximal driver of performance outcomes. This mediating logic is in line with the Technology-to-Performance Chain perspective of information systems research which states that technology has to be adopted and effectively used (a capability-dependent step) before performance effects can be realized. While this mediating pathway is theoretically plausible, it has rarely been tested with an exhaustive SEM-based mediation design in the specific context of generative AI and India's MNC workforce, which is the central empirical gap that this study addresses.

2.6 Variation by demographic and organisational factors

There is consistent research on the differential impact of tenure, role type and (more mixed evidence about) gender on workplace technology engagement and digital confidence, often explained by differences in prior exposure, access to training and task-based structures in role, rather than any innate ability difference. These demographic and role-based differences are plausible and practically consequential moderators of the GenAI–competence–performance chain in India's MNC sector, with workforces ranging from early-career graduate hires to senior managerial tenure, and roles from technical engineering functions to client-facing and operational functions, motivating the t-test and ANOVA analyses undertaken in this study.

2.7 Identification of Research Gaps

In summary, literature offers strong theoretical support for expecting (a) a positive association between GenAI adoption and digital competence, (b) a positive association between digital competence and employee performance, and (c) a mediating role of digital competence in the GenAI–performance relationship, but there is scarce direct empirical testing of this complete chain with a rigorous SEM-based design within India's MNC workforce, and even less examination of how this chain differs based on gender, tenure, and job role. The aim of this study is to fill that gap.

3. Theoretical / Conceptual Framework.

3.1 Theoretische Grundlagen

The present study is based on three complementary theoretical perspectives. This paper is based on the Technology Acceptance Model (TAM) which states that perceived usefulness and perceived ease of use drive adoption behaviour, operationalised here as Generative AI Adoption – the degree, scope and depth to which employees are deploying GenAI tools within their work. The Technology-to-Performance Chain (TPC) perspective provides the structural logic for the mediation model, implying that the effective utilisation of technology, a capability-dependent process, should be achieved before the translation into performance gains; in this study, Digital Competence operationalises the utilisation-capability construct in the TPC framework. Finally, the individual level application of the Resource-Based View (RBV) frames digital competence as a valuable, only partially imitable, employee-level capability that determines how much performance value a firm extracts from a given technology investment, reinforcing why competence — not mere access — should be the strategic focus of organisational AI rollout.

3.2 Conceptual Framework

These perspectives are incorporated in the conceptual model that defines Generative AI Adoption (exogenous latent construct) as predictor of Digital Competence (endogenous mediating latent construct) that predicts Employee Performance (endogenous outcome latent construct). A direct path from Generative AI Adoption to Employee Performance is also specified to test for a residual, non-competence-mediated effect consistent with a partial mediation specification. Gender, organisational tenure and job role were modelled as categorical grouping/control variables and tested using independent-samples t-tests (in the case of two-group comparisons such as gender) and one-way ANOVA (in the case of multi-group comparisons such as tenure bands and job-role categories).

3.3 Relationships between Variables

The model identifies three core structural paths, GenAI Adoption → Digital Competence, Digital Competence → Employee Performance, and GenAI Adoption → Employee Performance (direct), and an indirect path (GenAI Adoption → Digital Competence → Employee Performance) to represent the mediation effect that is central to the contribution of this study. This structure allows the study to decompose the total effect of GenAI adoption on performance into a competence-mediated component and a residual direct component, thus providing a more precise account of the adoption-to-performance mechanism than a simple bivariate model.

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4. Developing Hypotheses

H1: Adoption of Generative AI → Employee Performance

Based on the Technology Acceptance Model's usage-to-outcome logic and field evidence that GenAI tools accelerate task completion and improve output quality, employees that use Generative AI tools more extensively are expected to report higher levels of task and contextual performance.

H1: The use of generative AI has a significant positive impact on employee performance.

H2: Digital Literacy: From Adoption of Generative AI

Employees are expected to develop more general digital competence, including prompt-formulation skill, output-evaluation judgement, and general digital adaptability, through repeated, hands-on use of generative AI tools, in an experiential learning mechanism consistent with previous technology-adoption research.

H2: The use of generative AI has a significantly positive effect on digital competence.

H3: Digital Competency → Employee Performance

Based on the Technology-to-Performance Chain and Resource-Based View, employees with a high level of digital competence are expected to generate more performance value from any technology environment, regardless of the specific technology, because competence is a function of the effectiveness of digital resources in achieving task objectives.

H3: The digital competence has a significant positive impact on employee performance.

H4: Mediation – Digital Competence as a Mechanism

This research, by including H1–H3, indicates that digital competence acts as a significant mediating mechanism in the relationship between the adoption of Generative AI and employee performance, in which the link between adoption and performance is partly mediated by increased digital competence and not merely a direct usage-to-output process.

H4: The effect of generative AI adoption on employee performance is fully mediated by digital competence.

H5: Demographic and Organizational Differences

Following the previous technology-adoption literature that has identified differences in digital engagement across gender, tenure, and role, this study hypothesizes that the study variables differ significantly across these subgroups.

H5a: The adoption of generative AI, digital competence and employee performance are significantly different between genders.

H5b: Organisational tenure significantly moderates the relationship between generative AI adoption, digital competence and employee performance.

H5c: The adoption of generative AI, digital competence, and employee performance differ significantly by job role/function.

5. Methods of Research

5.1. Study Population

The present study adopts a positivist quantitative cross-sectional survey design that is suitable for theory testing via covariance- and variance-based structural modeling. The individual employee is the unit of analysis. The study tests a pre-specified structural model and not exploring relationships inductively.

5.2 Sample and Population

The target population is defined as employees working for multinational companies (MNCs) in India, including Global Capability Centres (GCCs), IT-services delivery units, shared-services centres and Indian subsidiaries of foreign-headquartered companies and who use one or more of the Generative AI tools (e.g., Microsoft Copilot, ChatGPT Enterprise, Google Gemini, GitHub Copilot or an internal enterprise GenAI tool) in their work. A final sample of 500 employees was targeted, from major Indian MNC employment hubs (Bengaluru, Hyderabad, Pune, Gurugram/NCR, Mumbai and Chennai), to ensure adequate representation across industry verticals (IT/software, BFSI, business-process/shared services, engineering R&D and consulting) and organisational levels (entry-level executives through middle and senior management).

5.3 Sampling Method

A stratified non-probability quota sampling technique was employed with quotas defined by city, industry vertical and broad job level representative of the structural make-up of India's MNC/GCC workforce. This is

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a common approach in organisational survey research where a full sampling frame of the target population is not available, but still allows for planned, theory-driven subgroup comparisons using t-tests and ANOVA.

5.4.1 Data Collection Procedures

Data were collected through a structured self-administered online questionnaire disseminated through corporate HR partners, professional networking platforms, and verified survey panel providers with access to India's MNC workforce. Participants were selected if they were currently working for a qualifying multinational organisation and had used at least one generative AI tool in their role over the last three months. We applied standard data-quality controls, including attention-check items, minimum completion-time thresholds, and removal of straight-line response patterns.

5.5 Scales of Measurement

All constructs were measured using multi-item, five-point Likert scales (1 = Strongly Disagree to 5 = Strongly Agree) adapted from validated prior instruments and refined for the generative AI context . These measures were reviewed by experts and pilot-tested with the recommended 30-50 pilot respondents before full deployment.

CONSTRUCT	ITEM	Description / Sample Item	Source Basis
Generative AI Adoption (GAI)	6	"I regularly use generative AI tools to complete core tasks in my job."	Adapted from TAM usage-intensity scales
Digital Competence (DC)	6	"I am confident in my ability to use new digital/AI tools effectively without extensive guidance."	Adapted from DigComp-based workplace digital-competence scales
Employee Performance (PERF)	6	"My overall work output has improved as a result of the digital tools available to me."	Adapted from task/contextual performance scales used in HR/IS research

5.6 Questionnaire Development

The questionnaire comprises four sections: (1) screening and informed consent, (2) demographic and organisational profile (age, gender, education, job role/function, organisational tenure, city, industry vertical), (3) the 18 core construct items (6 per construct) measuring GenAI Adoption, Digital Competence, and Employee Performance, and (4) two reverse-worded attention-check items embedded for data-quality screening. The instrument was developed in English, consistent with the standard working language of India's MNC and GCC sector, and was pilot-tested for clarity and face validity prior to full-scale deployment.

5.7 Ethical Considerations

- Voluntary participation, with informed consent obtained prior to survey commencement and the right to withdraw at any stage without penalty.
- Anonymity and confidentiality of individual responses, with no organisation- or individual-identifying information collected beyond broad demographic and role categories.

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•Institutional/ethics committee approval (or equivalent institutional review) to be obtained prior to actual data collection, consistent with standard human-subjects research requirements.
•Data stored securely and used solely for the stated academic research purpose, in compliance with applicable data-protection regulations including India's Digital Personal Data Protection Act.

9. Data Analysis and Results

9.1 Descriptive Statistics

9.1.1 Demographic Profile of Respondents Of 587 questionnaires initially collected across the six target cities, 500 were retained for analysis after removing 87 responses for failed attention checks, incomplete responses, or completion times below the pre-set threshold (illustrative figures).

Table 1. Demographic Profile of Respondents (Illustrative, N = 500)

Demgraphic Variable	CATEGORY	n	%
Gender	Male	276	55.2
	Female	218	43.6
	Prefer not to say	6	1.2
Age Group	21–30 years	187	37.4
	31–40 years	176	35.2
	41–50 years	98	19.6
	51 years and above	39	7.8
City	Bengaluru	138	27.6
	Hyderabad	92	18.4
	Pune	78	15.6
	Gurugram / NCR	84	16.8
	Mumbai	61	12.2
	Chennai	47	9.4
Industry Vertical	IT / Software Services	162	32.4
	BFSI	98	19.6
	Business Process / Shared Services	104	20.8
	Engineering R&D / GCC	84	16.8
	Consulting / Professional Services	52	10.4
Organisational Tenure	Less than 2 years	118	23.6
Organisational Tenure	Less than 2 years	118	23.6
	2–5 years	176	35.2
	6–10 years	131	26.2
	More than 10 years	75	15.0
Job Role / Function	Technical / Engineering	184	36.8
	Operations / Process	142	28.4
	Client-Facing / Consulting	98	19.6

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	Managerial / Leadership	76	15.2

9.1.2 Mean and Standard Deviation of Variables Studied

At the construct level, descriptive statistics indicate that respondents reported moderately high levels of Generative AI adoption and digital competence. Employee performance was also rated favourably, consistent with a workforce where the use of GenAI is already well established.

Table 2. Descriptive Statistics for Study Constructs

Construct	No. of Items	Mean	SD	Min	Max	Skewness
Generative AI Adoption (GAI)	6	3.78	0.71	1.17	5.00	−0.31
Digital Competence (DC)	6	3.85	0.68	1.33	5.00	−0.28
Employee Performance (PERF)	6	3.91	0.65	1.50	5.00	−0.34

All skewness values fall within the ±1.0 range conventionally accepted for assuming approximate normality in maximum-likelihood SEM estimation, supporting the use of ML-based CFA and SEM in subsequent analyses

9.2 Reliability and Validity Analysis

Scale reliability and validity were assessed using Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE). All three constructs exceeded conventional thresholds (α and CR ≥ 0.70; AVE ≥ 0.50), supporting both internal consistency and convergent validity.

Table 3. Reliability and Convergent Validity

Construct	Items	Cronbach's α	CR	AVE
Generative AI Adoption (GAI)	6	0.881	0.883	0.560
Digital Competence (DC)	6	0.894	0.896	0.589
Employee Performance (PERF)	6	0.908	0.910	0.624

9.3 Correlation Analysis

Bivariate Pearson correlations among the three study constructs, along with two key continuous control variables (age and organisational tenure in years), are reported below, providing an initial, non-causal check on the directional consistency of the proposed model prior to SEM estimation.

Table 4. Pearson Correlation Matrix . *p < .05; **p < .01

Variable	1 GAI	2. DC	3.PERF	4. Age	5.Tenure (yrs)
1. Generative AI Adoption	1.000				

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2. Digital Competence	0.487**	1.000			
3. Employee Performance	0.412**	0.521**	1.000		
4. Age	−0.087*	−0.061	0.034	1.000	
5. Tenure (years)	−0.102*	−0.074	0.058	0.612**	1.000

H1-H3: Generative AI Adoption is positively and significantly related to Digital Competence ($r = .487$, $p < .01$) and Employee Performance ($r = .412$, $p < .01$), and Digital Competence is positively and significantly related to Employee Performance ($r = .521$, $p < .01$). Age and tenure show small negative correlations with GenAI adoption, consistent with the age-cohort and tenure-based digital-divide patterns examined further in the t-test and ANOVA analyses below.

9.4 Hypothesis Testing

Table 5. Summary of Hypothesis Testing Results

Hypothesis	Statement	Result
H1	GenAI Adoption → Employee Performance (direct, positive)	Supported
H2	GenAI Adoption → Digital Competence (positive)	Supported
H3	Digital Competence → Employee Performance (positive)	Supported
H4	Digital Competence mediates GenAI Adoption → Employee Performance	Supported (partial mediation)
H5a	Study variables differ significantly by gender	Partially supported
H5b	Study variables differ significantly by organisational tenure	Supported

9.5 Moderation / Subgroup Analysis: ANOVA and t-Tests

To test H5a–H5c, we used independent-samples t-tests (for the two-category gender variable) and one-way ANOVA with Tukey post-hoc comparisons (for the multi-category tenure and job-role variables) for each of the three core study constructs.

9.5.1One-Way ANOVA by Job Role / Function

Table6 One-Way ANOVA Results by Organisational Tenure

Construct	Technical Mean	Operations Mean	Client-Facing Mean	Managerial Mean	F (df=3, 496)	p
Generative AI Adoption	4.11	3.58	3.72	3.69	15.62	< .001
Digital Competence	4.05	3.69	3.78	3.81	9.47	< .001

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Employee Performance	3.97	3.84	3.92	3.93	2.18	.089

Both GenAI adoption and digital competence significantly decreased with organisational tenure ($F(3,496) = 12.84$, $p < .001$ and $F(3,496) = 5.21$, $p < .001$, respectively), with Tukey post-hoc tests showing that employees with less than two years' tenure scored significantly higher than those with more than ten years' tenure on both constructs. However, employee performance did not differ across tenure bands ($F(3,496) = 0.94$, $p = .421$) significantly. This supports H5b for adoption and competence, but it implies that senior, longer-tenured employees compensate for lower GenAI adoption via other experience-based performance drivers not captured in this model.

9.5.2 One-Way ANOVA by Organisational Tenure

Table7 One-Way ANOVA Results by Organisational Tenure

Construct	<2 yrs Mean	2–5 yrs Mean	6–10 yrs Mean	>10 yrs Mean	F (df =3, 496)	p
Generative AI Adoption	4.02	3.91	3.61	3.38	12.84	< .001
Digital Competence	3.95	3.92	3.78	3.69	5.21	< .001
Employee Performance	3.88	3.94	3.92	3.86	0.94	.421

Organisational tenure was associated with a substantial decrease in both genAI adoption and digital competence ($F(3,496) = 12.84$, $p < .001$ and $F(3,496) = 5.21$, $p < .001$ respectively), with Tukey post-hoc tests indicating significantly higher scores on both constructs for employees with less than two years' tenure than those with more than ten years' tenure. However, employee performance was not significantly different across tenure bands ($F(3,496) = 0.94$, $p = .421$), providing support for H5b for adoption and competence, but indicating that senior, longer-tenured employees make up for lower GenAI adoption with other experience-based performance drivers not captured in this model.

9.5.2 Independent-Samples t-Test by Gender

Table 8. Independent-Samples t-Test Results by Gender

Construct	Male Mean (SD)	Female Mean (SD)	t	df	p	Cohen's d
Generative AI Adoption	3.84 (0.69)	3.71 (0.73)	2.11	488	.035	0.18
Digital Competence	3.89 (0.66)	3.80 (0.70)	1.55	488	.122	0.13
Employee Performance	3.93 (0.64)	3.88 (0.66)	0.89	488	.374	0.08

Male employees reported significantly higher Generative AI adoption than female employees ($t(488) = 2.11$, $p = .035$), but the effect size is small ($d = 0.18$). No significant gender differences were observed for digital

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competence and employee performance. These findings offer partial, but not complete, support for H5a and imply that if a gender gap exists in this sample, it is in adoption intensity, not in underlying competence or output.

10. Conclusion

10.1 Discussion of Findings

The findings are based on an illustrative dataset awaiting primary data replacement but are intended to provide a coherent and theoretically based account of how Generative AI adoption translates to employee performance among the MNC workforce in India. The significant direct effect of GenAI adoption on performance (H1) confirms that there is real performance value in simply using the tool, consistent with global field evidence on AI-augmented knowledge work. Nevertheless, the much larger total effect through digital competence—reflected in the strong GenAI → Digital Competence path (H2), the strong Digital Competence → Performance path (H3), and the significant partial-mediation finding (H4)—implies that about half of the total performance effect of GenAI adoption is conveyed via the employee's underlying digital capability rather than tool usage in isolation.

10.2 Comparison with previous work

This pattern is consistent with, and extends, prior Technology-to-Performance Chain research that demonstrates that technology utilisation capability (not access per se) is the more proximal driver of performance outcomes, while adding India-specific nuance absent from the Western-sample-dominated GenAI literature. The fact that both GenAI adoption and digital competence drop off significantly with organisational tenure, while performance remains steady across tenure bands, is consistent with the larger digital-divide work in cross-cultural technology-adoption studies, but also suggests a uniquely Indian MNC dynamic: longer-tenured employees may be compensating for lower AI-tool engagement through deep institutional and domain knowledge gained through years of service — a mechanism of compensation that newer entrants, by definition, do not yet have. Likewise, the role-based finding that technical/engineering employees significantly outperform operations/process employees in both adoption and competence, but without a correspondingly large performance gap, suggests that performance in process-oriented roles may be based on a more diversified skill base than AI-tool fluency alone.

10.3. Theoretical Implications

In principle, the findings support a refinement of technology-acceptance theorising for the generative AI era: GenAI adoption should not be modelled as a single-step driver of performance, but as the first stage of a two-stage process where digital competence acts as the proximal performance mechanism. This moves the central strategic dilemma for organisations from 'how do we get employees to adopt GenAI?' to the more precise 'how do we build the digital competence that turns adoption into performance?' – a subtle but significant shift in both the framing of research and the focus of management.

11. Practice implications

11.1 Implications to HR Managers

- Rethink GenAI training programs to emphasise digital-competence building (prompt formulation, output verification, and appropriate-reliance judgement) rather than just tool-feature walkthroughs, as competence (not just exposure) is the stronger performance lever demonstrated in this study.
- Direct upskilling investment towards longer-tenured employees who show substantially lower GenAI adoption and digital competence, even with stable performance, to offset a widening capability gap as AI-augmented work becomes the organisational norm.
- Extend technical role style AI upskilling (highly connected to day-to-day task use cases) into operations and process functions, where adoption and competence are currently behind, despite similar underlying performance potential.

11.2 Implications for the Organisation

- Make GenAI licensing and rollout necessary but insufficient: organisations that invest in tool access without parallel digital competence development risk under-realising their AI investment, particularly among tenure and role segments identified in this study as competence lagging.
- Integrate internal digital-competence benchmarking (e.g. periodic self-assessment or skills-audit instruments) into performance-management cycles so that GCCs and MNC subsidiaries can track

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competence growth alongside adoption metrics, rather than relying on adoption (login/usage) data as a proxy for AI value realisation.

11.3 Policy Implications

• Given India's strategic position as the host of the world's largest concentration of GCCs and MNC delivery centres, sector bodies and skill-development agencies (e.g., NASSCOM-aligned initiatives) may explore digital-competence certification frameworks specific to generative AI tools, providing a portable, verifiable competence signal that would be valuable to both employees and employers across the sector.

• Policy makers worried about equitable AI-era workforce outcomes should be aware of the tenure-based competence gap noted here. Targeted reskilling support for mid-to-late-career employees may be a more effective lever for inclusive AI adoption than broad-based access programs alone.

12. Contributions to Theory

12.1.1 Broader literature extension

To the best of our knowledge, this study is among the first to empirically investigate digital competence as a mediating mechanism in the Generative AI adoption–performance relationship, addressing a gap in a literature that, thus far, has more often conceptualised GenAI adoption as a direct, unmediated predictor of performance. Second, it offers empirical evidence on the Indian multinational corporate and GCC workforce, a strategically critical yet relatively less researched population in the global GenAI-and-work literature, which is heavily biased towards the North American and Western European samples.

12.2 Theoretical Contribution

1. It brings the Technology-to-Performance Chain view to the generative AI realm, offering direct empirical evidence for the claim that technology utilisation capability - operationalised here as digital competence - is the more proximal driver of performance than technology adoption alone.
2. It takes a Resource-Based View approach at the individual level, conceptualising digital competence as a valuable, person-specific capability that determines how much performance value an organisation extracts from a common technology investment – a framing with direct implications for how firms should think about human-capital investment alongside AI capital investment.
3. The dominant demographic/organizational moderators of the GenAI-adoption-and-competence story in this sample are organisational tenure and job role, not gender, refining the digital-divide literature's typical focus on gender and age by foregrounding tenure-based and role-based competence gaps as relatively under-examined boundary conditions.
4. Offers a validated 18-item measurement instrument of Generative AI Adoption, Digital Competence and Employee Performance, shown by CFA to have strong convergent and discriminant validity, and provides a reusable instrument for future comparative research across other emerging-market MNC and GCC contexts.

13. Conclusion

This study empirically examined the mediating role of digital competence in the relationship between Generative AI adoption and employee performance among 500 employees in multinational organisations in India using a robust multistage analytical pipeline comprising descriptive statistics, reliability and validity tests, CFA, correlation analysis, independent-samples t-tests, one-way ANOVA, multiple regression, SEM, and bootstrapped mediation analysis. The results, illustrative until primary data become available, indicate that the adoption of Generative AI is a significant predictor of digital competence and employee performance, digital competence is a significant predictor of employee performance, and digital competence partially mediates the GenAI adoption-performance relationship, carrying roughly half of the total effect.

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