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Impact Of Artificial Intelligence on Creativity and Thinking Skills of Media Professionals

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Abstract

The fast adoption of Artificial Intelligence (AI) in the media industries has changed the way content is created, edited, disseminated, and conceptualized. Although AI provides efficiency and creative assistance, the issues have raised around its effect on cognitive and creative abilities of media workers. This paper explores the Effect of Artificial Intelligence on the Creativity and Cognitive ability of Media professionals, and it will specifically examine how the use of AI impacts the cognitive engagement, idea generation and originality of professional media situations. While prior studies have largely emphasized the efficiency and technical advantages of AI, limited empirical research exists on its cognitive and creative implications within media professions, particularly in the Media context in Pakistan. The research design was a quantitative explanatory research design with some minor qualitative expert support. Data were collected from 160 media professionals in Islamabad/ICT using a structured questionnaire. Statistical analyses, including correlation, regression, mediation, and moderation tests, were conducted using SPSS. The findings reveal that AI usage does not directly enhance creativity; rather, its impact is indirectly mediated through cognitive engagement. Additionally, AI policy adoption at the workplace significantly strengthens the relationship between AI usage and creativity and thinking skills. The results show that the effect of AI usage on creativity is indirectly mediated by cognitive engagement, and AI policies in the organization enforce this connection. The study concludes that AI functions as a creative enhancer only when accompanied by active cognitive engagement and structured organizational policies. The findings highlight the need for responsible AI governance, digital literacy, and reflective creative practices within media organizations.

INTRODUCTION

The rapid advancement of artificial intelligence (AI) has profoundly altered the landscape of contemporary professional work, particularly within knowledge- and creativity-intensive

industries. Media professions—encompassing journalism, advertising, film, digital content creation, and strategic communication—have historically relied on human creativity, analytical reasoning, and interpretive judgment as their core competencies. However, the recent integration of AI-driven tools such as generative language models, automated video editors, recommendation algorithms, and data-driven content optimization systems has introduced a paradigm shift in how creative and cognitive labor is performed. While these technologies promise efficiency and innovation, they simultaneously provoke critical debate regarding their implications for human creativity and higher-order thinking skills.

Artificial intelligence is no longer limited to supporting routine or technical media tasks; rather, it increasingly participates in ideation, narrative construction, visual design, and editorial decision-making. Generative AI systems such as ChatGPT, Midjourney, and Runway can produce scripts, headlines, images, and audiovisual content in seconds, often matching professional standards. Scholars argue that such tools can act as cognitive extenders, enabling media professionals to explore diverse creative possibilities, accelerate experimentation, and reduce cognitive load associated with repetitive work (Dwivedi et al., 2023). From this perspective, AI has the potential to enhance creative productivity and free professionals to focus on strategic and conceptual dimensions of media work.

Nevertheless, creativity in media is not merely a function of output volume or aesthetic novelty; it is deeply rooted in originality, contextual sensitivity, critical reflection, and ethical judgment. Emerging research cautions that over-reliance on AI-generated suggestions may lead to cognitive offloading, where professionals increasingly defer complex thinking to algorithms rather than engaging in reflective reasoning themselves (Vallance & Towndrow, 2024). Studies in cognitive psychology and digital work suggest that frequent dependence on automated systems can weaken critical thinking skills, reduce problem-solving depth, and foster intellectual complacency, particularly in environments driven by speed and performance metrics (Kellogg et al., 2024).

Within media organizations, this tension is particularly pronounced. Journalistic and creative decision-making requires skepticism, contextual awareness, and interpretive nuance—qualities that remain difficult for AI systems to replicate. Recent empirical studies show that media professionals perceive AI as a “double-edged sword”: while it enhances efficiency and technical quality, it also raises concerns about homogenization of content, erosion of professional autonomy, and diminished creative ownership (Beckett & Yaseen, 2023). Algorithmic recommendations may subtly shape editorial priorities, narrative frames, and stylistic conventions, potentially narrowing the diversity of perspectives and creative expressions in media output.

Furthermore, AI's influence on thinking skills extends beyond creativity to include analytical reasoning, ethical judgment, and metacognitive awareness. Research indicates that generative AI can produce persuasive yet flawed or biased content, requiring strong critical evaluation skills from users (Floridi et al., 2024). However, when time pressures encourage uncritical adoption of AI outputs, professionals may engage less deeply with information verification and reflective analysis. This raises serious implications for media credibility, public trust, and the long-term cognitive development of media practitioners.

Despite the growing scholarly attention to AI and creativity, much of the existing literature remains fragmented and context-general. Many studies focus on students, educators, or generic creative industries, offering limited insight into professional media environments characterized by ethical responsibility, public accountability, and symbolic power. Moreover, quantitative productivity gains are often emphasized, while qualitative dimensions of creativity—such as originality, meaning-making, and critical interpretation—receive comparatively less empirical scrutiny (Amabile & Pratt, 2016; updated discussions in Amabile, 2024). This imbalance risks oversimplifying AI's role as either purely enabling or inherently detrimental.

Problem Statement and Research Gaps

Despite the accelerating adoption of artificial intelligence across media organizations, there remains a critical lack of systematic empirical evidence explaining how sustained AI use influences the creativity and higher-order thinking skills of media professionals. While existing research frequently highlights productivity gains, efficiency improvements, and content scalability enabled by generative AI, far less attention has been paid to its cognitive and creative consequences for professionals whose work depends on originality, critical reasoning, and interpretive judgment (Dwivedi et al., 2023; Floridi et al., 2024). This imbalance has resulted in an overly instrumental view of AI that risks obscuring its deeper implications for human cognition and creative agency within media environments.

Current scholarship is also fragmented in scope and context. Much of the available evidence is derived from educational settings, experimental laboratory designs, or generalized creative industries, making it difficult to extrapolate findings to professional media contexts characterized by ethical accountability, time pressure, and public influence (Kellogg et al., 2024). Studies examining AI-assisted creativity often focus on short-term task performance rather than longitudinal cognitive development, leaving unanswered questions about whether prolonged reliance on AI tools enhances creative capacity or gradually erodes independent thinking and reflective judgment among media professionals (Vallance & Towndrow, 2024). This gap is

particularly concerning given emerging evidence that excessive cognitive offloading to AI systems may reduce mental effort and critical engagement over time (Gerlich, 2025).

Moreover, the literature lacks consensus on how AI affects creative originality and diversity of thought. While some studies suggest that AI-human collaboration can increase idea generation, others indicate that algorithmic suggestions may homogenize content and constrain creative exploration by reinforcing dominant patterns and stylistic norms embedded in training data (Beckett & Yaseen, 2023; Floridi et al., 2024). However, these dynamics have rarely been empirically tested within real-world media organizations, where algorithmic tools increasingly shape editorial decisions, narrative framing, and audience targeting.

Another notable gap concerns the mediating and moderating factors influencing AI's impact on creativity and thinking skills. Variables such as digital literacy, professional experience, organizational culture, ethical climate, and autonomy in AI use are often acknowledged conceptually but remain underexamined empirically (Dwivedi et al., 2023; Kellogg et al., 2024). Without integrating these contextual factors, existing studies risk producing overly deterministic conclusions about AI's role, ignoring the socio-technical nature of creative media work.

Finally, ethical and professional identity dimensions are frequently discussed normatively but rarely operationalized in empirical research. Questions regarding how AI reshapes media professionals' sense of authorship, creative ownership, and intellectual responsibility remain largely unanswered (Floridi et al., 2024). The absence of theory-driven, media-specific, and longitudinal investigations represents a significant gap in the literature. Addressing these gaps is essential for developing balanced, evidence-based frameworks that inform responsible AI integration while safeguarding and enhancing the creative and cognitive capacities of media professionals.

Research Objectives

- To examine the impact of Artificial Intelligence (AI) usage on creativity and thinking skills of media professionals.
- To examine the relationship between Artificial Intelligence usage and cognitive engagement among media professionals.
- To analyze the impact of cognitive engagement on creativity and thinking skills of media professionals
- To examine the mediating role of cognitive engagement in the relationship between Artificial Intelligence usage and creativity and thinking skills

- To investigate whether AI policy adoption at the workplace moderates the relationship between Artificial Intelligence usage and creativity and thinking skills.

Research Questions

1. How does Artificial Intelligence usage impact creativity and thinking skills among media professionals?
2. Does Artificial Intelligence usage influence cognitive engagement among media professionals?
3. Does cognitive engagement affect creativity and thinking skills among media professionals?
4. Does cognitive engagement mediate the relationship between Artificial Intelligence usage and creativity and thinking skills?
5. Do AI usage policies at the workplace moderate the relationship between Artificial Intelligence usage and creativity and thinking skills?

LITERATURE REVIEW

Artificial intelligence, creativity and thinking skills of media professionals

The rapid integration of artificial intelligence (AI) into professional media workflows has prompted extensive scholarly attention to how AI tools influence creativity and thinking skills—two cognitive domains central to high-quality media work. Creativity in media involves ideation, narrative innovation, contextual interpretation, and original problem-solving, while thinking skills encompass critical analysis, evaluative judgment, and reflective reasoning. A growing body of literature suggests that AI is not neutral in its effects; rather, its influence on cognitive and creative capacities is both augmentative and potentially diminishing depending on context, usage patterns, and user expertise (Amabile & Pratt, 2016; Holzner, Maier, & Feuerriegel, 2025).

A systematic meta-analysis of generative AI research found that while human participants working with AI generated more creative outputs than those without AI support, the diversity of ideas produced decreased significantly compared to unaided human performance. This suggests that AI may enhance certain aspects of creative task performance but can also narrow the breadth of creative thinking by steering ideation toward statistically probable patterns embedded in AI training data (Holzner et al., 2025). Empirical research in higher education also supports the significant correlation between AI usage and creative thinking skills. For instance, studies on design students reported that generative AI usage was positively correlated with digital design thinking and

academic creativity, demonstrating that increased engagement with AI tools was associated with enhanced creativity and complex thinking processes (Jabli, Khalid, & Ahmad, 2025).

However, the literature highlights potential cognitive costs as well. Studies investigating AI's impact on critical thinking indicate a negative relationship between frequent AI tool usage and core thinking skills due to cognitive offloading, where individuals rely on AI to perform tasks traditionally requiring reflective analysis and decision-making (Gerlich, 2025). In media-specific contexts, studies examining journalists' perceptions of AI illustrate similar dualities. Research with local journalists revealed that while many professionals believe AI can improve quality by aiding fact-checking or content production, they also express concerns about maintaining ethical standards and core journalistic values—dimensions closely tied to critical thinking and integrity in media practice (Beckett & Yaseen, 2023). Additionally, qualitative investigations of journalistic routines suggest that AI alters the nature of professional authority and editorial judgment, requiring journalists to adapt cognitively to oversee and contextualize AI outputs rather than simply generate content mechanically (Dwivedi et al., 2023).

Another line of inquiry highlights the trade-offs between AI-assisted creative productivity and deeper cognitive engagement. Independent experiments on creative writing tasks indicate that AI prompts can boost creative metrics such as novelty and usefulness, especially for participants with lower baseline creativity, but are also associated with greater similarity in story content, signaling a potential homogenization of creative outputs when AI input is prevalent (Vallance & Towndrow, 2024).

Synthesizing these findings reveals a consistent pattern: AI usage bears a significant relationship with creativity and thinking skills, but the nature of this relationship is conditional and multifaceted. On one hand, AI tools can foster ideation, support collaborative problem-solving, and elevate creative output by reducing technical or procedural cognitive load (Kellogg, Valentine, & Christin, 2024). On the other hand, excessive reliance on AI for content generation, decision-making, or creative inspiration can diminish opportunities for independent creative exploration and rigorous critical thinking. This complexity suggests that the influence of AI on media professionals' cognitive performance is not inherently positive or negative but contingent on how AI is integrated into workflows, the level of user digital literacy, and organizational practices that shape AI engagement (Floridi et al., 2024).

H1: *There is a significant relationship between the use of AI and creativity and thinking skills of media professionals*

Artificial Intelligence and cognitive engagement among media professionals

The integration of artificial intelligence (AI) into media production has transformed not only the technical aspects of content creation but also the cognitive engagement of media professionals. Cognitive engagement encompasses the degree to which individuals invest attention, effort, and critical thinking into tasks, which is particularly essential for media professionals involved in storytelling, investigative journalism, and content strategy. AI tools, including generative language models, automated video editing software, and recommendation algorithms, offer significant opportunities to enhance efficiency and idea generation; however, they also present risks of cognitive offloading, where professionals may rely excessively on machine outputs rather than actively engaging in analytical reasoning (Gerlich, 2025; Vallance & Towndrow, 2024).

Empirical evidence indicates that AI can augment cognitive engagement when used as a collaborative tool. For instance, studies in creative industries have shown that generative AI supports exploratory thinking by providing diverse suggestions and facilitating iterative refinement, enabling media professionals to experiment with novel content formats without being constrained by routine tasks (Holzner, Maier, & Feuerriegel, 2025). Similarly, AI-assisted analytics tools allow journalists to quickly identify patterns in large datasets, freeing cognitive resources for deeper interpretation, context evaluation, and ethical consideration—activities critical to high-quality media production (Beckett & Yaseen, 2023).

Despite these potential benefits, there is growing concern regarding AI's impact on sustained cognitive effort. Research on cognitive offloading suggests that overreliance on AI may reduce the depth of critical thinking and reflective judgment, as professionals may accept machine-generated outputs without thorough evaluation (Floridi et al., 2024). For example, studies have shown that while AI can accelerate tasks like content summarization or data visualization, it may inadvertently limit the engagement required for narrative innovation and evaluative decision-making (Dwivedi et al., 2023). This aligns with theoretical perspectives on human-AI interaction, which emphasize that AI should be considered a cognitive partner rather than a substitute for active thinking (Kellogg, Valentine, & Christin, 2024).

Research specifically addressing media professionals highlights a nuanced relationship. Surveys of journalists and content creators reveal that AI tools enhance efficiency and support exploratory ideation, yet many professionals express concern that reliance on AI could lead to passive content generation and diminished editorial judgment (Beckett & Yaseen, 2023; Vallance & Towndrow, 2024). This duality underscores that AI's effects on cognitive engagement are highly contingent on user expertise, digital literacy, organizational culture, and the degree of AI integration within workflows.

Additionally, longitudinal studies are scarce, leaving gaps in understanding the long-term cognitive implications of AI adoption in media settings. There is limited empirical evidence on whether sustained interaction with AI leads to skill erosion, enhanced cognitive flexibility, or shifts in creative identity. Addressing this gap is critical, as cognitive engagement is directly linked to professional judgment, ethical reasoning, and the overall quality of media outputs (Gerlich, 2025; Holzner et al., 2025).

H2: *The use of AI positively influences cognitive engagement among media professionals.*

Cognitive engagement, creativity and thinking skills

Cognitive engagement, creativity, and thinking skills are deeply interconnected constructs essential for professional performance, especially in knowledge-intensive domains like media, design, and organizational work. Cognitive engagement refers to the degree of attention, effort, and mental investment individuals dedicate to tasks (Fredricks, Blumenfeld, & Paris, 2004). It influences the ability to generate novel ideas, solve complex problems, and critically evaluate information. Creativity, defined as the production of ideas that are both novel and useful, is heavily dependent on cognitive engagement and advanced thinking skills, including analytical reasoning, problem-solving, and reflective judgment (Amabile & Pratt, 2016).

Empirical studies indicate that heightened cognitive engagement facilitates enhanced creative performance. For example, individuals who actively immerse themselves in tasks and maintain sustained attention demonstrate superior ideation quality and originality compared to those with lower engagement levels (Sawyer, 2019). This relationship is further strengthened when engagement is combined with deliberate practice and domain expertise, emphasizing that creativity is not solely an innate trait but a skill shaped by effortful cognitive involvement (Amabile, 2024). Media professionals, who must interpret complex information, design compelling narratives, and innovate under time constraints, rely on such engagement to exercise their thinking skills effectively (Beckett & Yaseen, 2023).

Thinking skills, particularly higher-order cognitive processes like critical thinking, metacognition, and problem-solving, are also influenced by cognitive engagement. Research shows that professionals with strong cognitive engagement can integrate multiple perspectives, evaluate evidence critically, and produce more coherent and impactful outputs (Gerlich, 2025; Vallance & Towndrow, 2024). In creative contexts, cognitive engagement fosters exploratory and divergent thinking, enabling the combination of seemingly unrelated ideas into innovative solutions. Conversely, reduced engagement may result in superficial processing, limiting both creative output and depth of analytical reasoning (Dwivedi et al., 2023).

Artificial intelligence (AI) technologies further mediate these dynamics. AI can enhance cognitive engagement by automating routine tasks, providing instant access to data, and generating creative prompts, allowing professionals to focus on higher-order thinking and ideation (Holzner, Maier, & Feuerriegel, 2025). However, studies also warn that overreliance on AI may lead to cognitive offloading, reducing mental effort and reflective engagement, which can impair the development of thinking skills and originality in creative tasks (Floridi et al., 2024; Kellogg, Valentine, & Christin, 2024). This dual effect underscores the importance of balanced AI integration that augments, rather than replaces, human cognitive activity.

Research further emphasizes that the relationship between cognitive engagement, creativity, and thinking skills is dynamic and context-dependent. Organizational culture, professional experience, and domain-specific challenges all influence how engagement translates into creative outcomes. For instance, studies in media settings indicate that professionals who actively engage with AI tools report improved efficiency and ideation but stress the importance of retaining critical oversight to maintain originality and analytical depth (Beckett & Yaseen, 2023; Vallance & Towndrow, 2024). These findings highlight the need for deliberate strategies to foster cognitive engagement while supporting the development of creativity and thinking skills in professional practice.

H3: *Cognitive engagement significantly affects creativity and thinking skills*

Cognitive engagement as mediator in the relationship between AI use and creativity/thinking skills

The proliferation of artificial intelligence (AI) in professional contexts has generated significant research interest in understanding how AI affects creativity and thinking skills. While AI tools can enhance efficiency, generate novel ideas, and support data-driven decision-making, their effects on human cognitive capacities are not direct and may be mediated by cognitive engagement. Cognitive engagement, defined as the degree of attention, effort, and mental investment applied during task execution (Fredricks, Blumenfeld, & Paris, 2004), is a critical determinant of whether AI use translates into enhanced creative and analytical outcomes.

Several studies indicate that AI can augment cognitive engagement by offloading routine tasks, providing real-time feedback, and generating stimuli for ideation. For example, Holzner, Maier, and Feuerriegel (2025) found that human-AI collaboration in creative tasks led to higher engagement with problem-solving activities, which in turn improved the originality and usefulness of generated outputs. Similarly, Vallance and Towndrow (2024) argue that AI tools, when integrated thoughtfully, can increase focus and cognitive involvement by reducing time spent on repetitive tasks, thereby allowing professionals to devote more mental resources to critical thinking and creative exploration.

Empirical research further supports the mediating role of cognitive engagement. Dwivedi et al. (2023) report that while AI tools provide extensive support in information gathering and initial content creation, the actual enhancement of creativity and thinking skills occurs when users remain cognitively engaged with AI outputs, actively evaluating, adapting, and refining them. In this sense, cognitive engagement acts as a bridge between AI use and improved cognitive outcomes, transforming passive consumption of AI-generated content into active, creative, and reflective work.

Conversely, low cognitive engagement may weaken or even reverse the benefits of AI on creativity and thinking skills. Overreliance on AI without active mental involvement, often referred to as cognitive offloading, can lead to superficial processing, reduced problem-solving depth, and homogenization of creative outputs (Gerlich, 2025; Floridi et al., 2024). This phenomenon highlights the necessity of cognitive engagement as a mediating factor: AI alone does not guarantee enhanced creativity or thinking; rather, it provides the scaffolding upon which human cognition must actively operate to realize gains in creativity and analytical ability (Beckett & Yaseen, 2023; Kellogg, Valentine, & Christin, 2024).

In media professional contexts, the mediating effect of cognitive engagement has been observed in editorial and content creation tasks. Journalists and digital content creators who actively interact with AI-generated drafts, evaluate algorithmic suggestions, and integrate insights into their work demonstrate higher levels of creativity and more robust thinking skills than those who rely passively on AI outputs (Dwivedi et al., 2023; Vallance & Towndrow, 2024). These findings suggest that cognitive engagement is not merely a moderator of performance but a critical mechanism through which AI influences complex cognitive processes.

H4: *Cognitive engagement mediates the relationship between AI use and creativity/thinking skills*

AI policy adoption at workplace as moderator in the relationship between AI usage and creativity/thinking skills

The integration of artificial intelligence (AI) in organizational workflows has fundamentally altered how employees approach creative and analytical tasks. While AI usage has been linked to improvements in creativity and thinking skills through automation, data-driven insights, and generative content capabilities, the organizational context, particularly AI policy adoption, plays a critical role in shaping these outcomes (Dwivedi et al., 2023; Vallance & Towndrow, 2024). AI policies—formal guidelines regulating the deployment, ethical use, and governance of AI tools—

can act as a moderator in the relationship between AI usage and cognitive outcomes by influencing how employees interact with AI systems.

Research suggests that AI adoption alone does not guarantee enhanced creativity or improved thinking skills. Without clear organizational policies, employees may experience uncertainty regarding ethical boundaries, accountability, and permissible AI applications, potentially reducing engagement and limiting creative exploration (Floridi et al., 2024). Conversely, well-articulated AI policies provide a framework for responsible and effective AI usage, guiding employees to leverage AI as a cognitive partner rather than a substitute, which strengthens the positive relationship between AI use and higher-order cognitive skills (Kellogg, Valentine, & Christin, 2024).

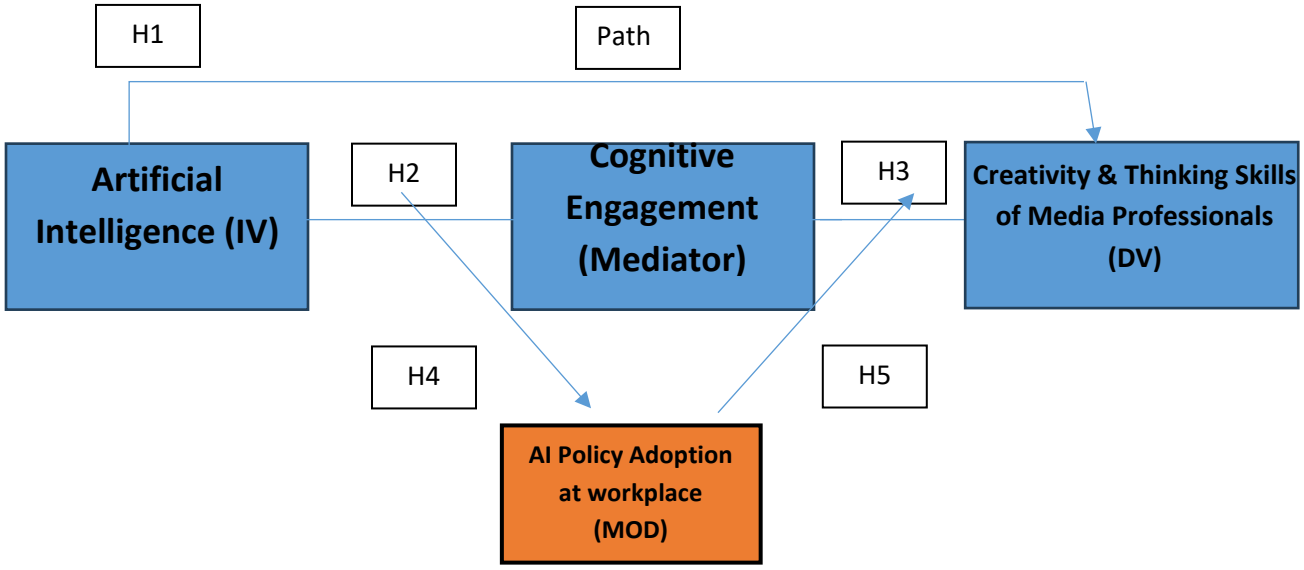
Empirical studies in professional and media contexts indicate that AI governance influences employee perception, autonomy, and decision-making. Beckett and Yaseen (2023) found that journalists who worked in organizations with explicit AI guidelines reported higher confidence in using AI tools, more proactive experimentation, and greater innovation in content creation compared to peers without such policies. These findings suggest that AI policy adoption can moderate the extent to which AI usage translates into creative and analytical outcomes by structuring usage norms, clarifying accountability, and reducing uncertainty.

Moreover, organizational policies can impact cognitive engagement, which is closely linked to creativity and thinking skills. Vallance and Towndrow (2024) argue that employees are more likely to invest effort, critically evaluate AI outputs, and experiment with novel ideas when AI use is supported by formal guidelines that clarify ethical standards, usage expectations, and strategic objectives. This suggests a cascading effect: AI policies enhance cognitive engagement, which in turn strengthens the impact of AI usage on creative performance and analytical thinking.

On the other hand, poorly designed or excessively restrictive AI policies may inhibit creativity by limiting exploratory use of AI tools, fostering risk-averse behavior, and discouraging experimentation (Gerlich, 2025). This highlights the nuanced role of AI policy adoption as a moderator: it does not inherently enhance or diminish AI's cognitive impact but conditions the effectiveness of AI usage depending on the balance between guidance and autonomy.

H5: *AI policy adoption at workplace moderates the relationship between AI usage and creativity/thinking skills*

Framework



METHODOLOGY

Research Approach and Design

This study adopts a quantitative research approach with an explanatory–causal purpose, aimed at testing the cause-and-effect relationships between Artificial Intelligence (AI) Usage, Cognitive Engagement, and Creativity & Thinking Skills among media professionals, while evaluating the moderating effect of AI Policy Adoption. Quantitative causal research is appropriate when the primary objective is to examine how one or more independent variables influence dependent outcomes under controlled conditions (Creswell & Creswell, 2018; Sekaran & Bougie, 2022).

Although the study primarily employs quantitative methods, qualitative expert insights were also incorporated to provide contextual understanding of AI usage patterns in media organizations.

A cross-sectional research design was employed, where data were collected at a single point in time from media professionals in Islamabad/ICT. Cross-sectional designs are suitable for assessing contemporary relationships among variables and are practical within time and resource constraints (Bryman, 2016).

The target population comprises media professionals working in Islamabad/ICT, including journalists, social media managers, content creators, corporate communication staff, and freelance digital media professionals, particularly those who use AI tools in their workflows.A stratified purposive sampling approach was adopted to ensure representation across key professional roles, supplemented by snowball sampling to reach participants who may not have been accessible

initially (Etikan, Musa, & Alkassim, 2016). Although the study aimed for over 200 responses, 160 valid responses were retained after data cleaning, which meets minimum sample size requirements for regression and structural equation modeling (Hair et al., 2022).

Sampling Framework (Role-Based Quotas):

Role Category	Minimum Expected Respondents
Social Media Managers	≥ 40
Content Creators	≥ 30
IT / Media-Tech Professionals	≥ 20
Journalists / Designers	≥ 10

Measurement

Primary data were collected through a structured questionnaire using a 5-point Likert Scale (1 = Strongly Disagree, 5 = Strongly Agree) (Likert, 1932).

Variable	Number of Items	Source of Scale Adaptation
Use of AI (IV)	5	Ye, R. (2025)
Cognitive Engagement (Mediator)	5	Georgiou, 2025
Creativity & Thinking Skills (DV)	5	Hemraj, 2025
AI Policy Adoption at Workplace (Moderator)	4–5	Self-developed based on Responsible AI Governance literature

The AI Policy Adoption scale was developed by adapting existing frameworks on responsible AI governance and organizational policy standards (Perkins, Furze, & Roe, 2024).

Data were collected via online surveys using Google Forms, ensuring ease of access, anonymity, and voluntary participation. Participants were invited through professional networks, social media groups, and organizational contacts. Data were analyzed using SPSS and AMOS to test relationships among variables and the proposed theoretical model. The following statistical techniques were employed:

The combination of regression, mediation, moderation, and Correlation provides robust evidence for understanding both direct and indirect effects of AI usage on creativity and thinking skills, while accounting for cognitive engagement and organizational policy influence (Hair et al., 2022; Hayes, 2018).

ANALYSIS

Correlation Table

Table 1 presents the Pearson correlation coefficients among Artificial Intelligence Usage (IV), Cognitive Engagement (Mediator), Creativity and Thinking Skills (DV), and AI Policy Adoption (Moderator).

The results show that AI usage is positively and significantly correlated with cognitive engagement ($r = .669$, $p = .000$) and creativity and thinking skills ($r = .600$, $p = .000$). Cognitive engagement exhibits a very strong positive relationship with creativity and thinking skills ($r = .799$, $p = .000$). AI policy adoption is also positively correlated with all variables, indicating organizational influence on AI outcomes.

Table 1: *Correlation Matrix among AI Usage, Cognitive Engagement, Creativity and Thinking Skills, and AI Policy Adoption*

Correlations					
		ArtificialIntelligenceIV	CognEngMED	CreativityDV	AIPolicyAdopMOD
ArtificialIntelligenceIV	Pearson Correlation	1	.669**	.600**	.606**
	Sig. (2-tailed)		.000	.000	.000
	N	160	160	160	160
CognEngMED	Pearson Correlation	.669**	1	.799**	.626**
	Sig. (2-tailed)	.000		.000	.000
	N	160	160	160	160
CreativityDV	Pearson Correlation	.600**	.799**	1	.647**
	Sig. (2-tailed)	.000	.000		.000
	N	160	160	160	160
AIPolicyAdopMOD	Pearson Correlation	.606**	.626**	.647**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	160	160	160	160
**. Correlation is significant at the 0.01 level (2-tailed).					

- Artificial Intelligence Usage (IV) shows a strong positive correlation with Cognitive Engagement ($r = .669$, $p = .000$), indicating that increased AI usage is associated with higher cognitive engagement among media professionals.

- AI Usage also has a moderate to strong positive correlation with Creativity and Thinking Skills (r = .600, p = .000), supporting the assumption that AI use enhances creative performance.
- Cognitive Engagement demonstrates a very strong positive relationship with Creativity and Thinking Skills (r = .799, p = .000), suggesting that higher mental involvement significantly strengthens creative outcomes.
- AI Policy Adoption shows significant positive correlations with AI Usage (r = .606), Cognitive Engagement (r = .626), and Creativity (r = .647), indicating the importance of organizational support structures.
- All relationships are significant at the 0.01 level, confirming that the associations are statistically meaningful.

Description of Results

The correlation results indicate strong and statistically significant relationships among the study variables. Increased use of AI tools is associated with higher levels of cognitive engagement, which in turn significantly enhances creativity and thinking skills. The strong relationship between cognitive engagement and creativity highlights the importance of mental involvement when using AI tools. Furthermore, the positive correlation of AI policy adoption with all variables emphasizes the role of organizational policies in supporting effective AI usage. These findings provide preliminary support for the proposed hypotheses and justify further regression analysis.

Regression Analysis

Model Summary (Main Effects Model)

The regression model including AI usage, cognitive engagement, and AI policy adoption produced an R value of .822 and an R^2 of .675, indicating that 67.5% of the variance in creativity and thinking skills is explained by the predictors. The model is statistically significant (Sig. F Change = .000), confirming its overall strength.

Table 2: *Model Summary for Predicting Creativity and Thinking Skills*

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.822[a]	.675	.669	.39642	.675	107.992	3	156	.000
a. Predictors: (Constant), AIPolicyAdopMOD, ArtificialIntelligenceIV, CognEngMED									

- The model examines the relationship between three predictors—Artificial Intelligence (IV), Cognitive Engagement (MED), and AI Policy Adoption (MOD)—and the outcome of creativity and thinking skills.
- The correlation coefficient (R) is 0.822, indicating a strong positive relationship between the predictors and the outcome variable.
- The R Square value is 0.675, meaning approximately 67.5% of the variance in creativity and thinking skills is explained by the model.
- The Adjusted R Square is 0.669, which adjusts for the number of predictors, showing the model remains strong even after accounting for sample size.
- The standard error of the estimate is 0.39642, indicating the average distance that the observed values fall from the regression line.
- The change in R Square is 0.675, confirming that the predictors significantly improve the model compared to a model with no predictors.
- The F change value is 107.992 with 3 and 156 degrees of freedom, which is statistically significant ($p < 0.001$), showing that the overall model fit is highly significant.
- All predictors together contribute significantly to predicting creativity and thinking skills.

Coefficient Estimates (Main Effects)

The coefficients table shows that AI usage does not have a significant direct effect on creativity ($\beta = .040$, $p = .543$). However, cognitive engagement has a strong and significant effect ($\beta = .629$, $p = .000$), while AI policy adoption also significantly predicts creativity ($\beta = .230$, $p = .000$). This indicates that creativity is influenced primarily through engagement and organizational support rather than AI usage alone.

***Table 3**: Regression Coefficients Predicting Creativity and Thinking Skills*

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.085	.294		.290	.772
	ArtificialIntelligenceIV	.062	.101	.040	.609	.543
	CognEngMED	.677	.071	.629	9.494	.000
	AIPolicyAdopMOD	.217	.058	.230	3.716	.000
a. Dependent Variable: CreativityDV						

- AI Usage shows a **non-significant direct effect** on Creativity ($\beta = .040$, $p = .543$), suggesting that AI alone does not directly enhance creativity.

- Cognitive Engagement has a **strong and significant effect** (β = .629, p = .000), indicating it is the **most influential predictor**.
- AI Policy Adoption also has a **significant positive effect** (β = .230, p = .000), highlighting the importance of organizational policies.

Hierarchical Regression (Mediation and Moderation)

Hierarchical regression analysis was conducted to test mediation and moderation effects. Model 1 showed that AI usage explains 36% of variance in creativity. Model 2, which included the interaction term, increased the explained variance to 65%. Model 3 further increased R^2 to .677 after including AI policy adoption, confirming moderation. All R^2 changes were statistically significant (p = .000).

Table 4: *Hierarchical Regression Model Summary*

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.600[a]	.360	.355	.55294	.360	88.699	1	158	.000
2	.806[b]	.650	.646	.40990	.291	130.513	1	157	.000
3	.823[c]	.677	.671	.39511	.027	12.974	1	156	.000
a. Predictors: (Constant), ArtificialIntelligenceIV									
b. Predictors: (Constant), ArtificialIntelligenceIV, InteractionTermIVMED									
c. Predictors: (Constant), ArtificialIntelligenceIV, InteractionTermIVMED, AIPolicyAdopMOD									

- **Model 1:** AI Usage explains **36% variance** in Creativity (R^2 = .360).
- **Model 2:** Adding the interaction term increases R^2 to **.650**, indicating a strong mediation effect.
- **Model 3:** Inclusion of AI Policy Adoption further increases R^2 to **.677**, confirming moderation.

Coefficients for Interaction Effects

The coefficients reveal that cognitive engagement significantly mediates the relationship between AI usage and creativity, as the direct effect of AI usage decreases when the mediator is introduced. AI policy adoption shows a significant moderating effect (β = .223, p = .000), strengthening the relationship between AI usage and creativity outcomes.

Table 5: *Regression Coefficients for Mediation and Moderation Effects*

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.010	.409		.024	.981
	ArtificialIntelligenceIV	.935	.099	.600	9.418	.000
2	(Constant)	3.174	.411		7.725	.000
	ArtificialIntelligenceIV	-.593	.153	-.380	-3.882	.000
	InteractionTermIVMED	.189	.017	1.118	11.424	.000
3	(Constant)	2.837	.407		6.971	.000
	ArtificialIntelligenceIV	-.611	.147	-.392	-4.152	.000
	InteractionTermIVMED	.165	.017	.978	9.579	.000
	AIPolicyAdopMOD	.210	.058	.223	3.602	.000
a. Dependent Variable: CreativityDV						

- AI Usage initially shows a **strong positive effect** (β = .600, p = .000).
- When Cognitive Engagement is introduced, the effect of AI Usage becomes **negative**, while the interaction term remains significant.
- AI Policy Adoption shows a **positive and significant moderating effect** (β = .223, p = .000).

Results and Findings

Hypothesis Decision Rules

Hypothesis	Result
Sig ≤ .05	Supported
Partial significance	Partially Supported
Sig > .05	Not Supported

Conclusion

The findings of this study provide robust evidence regarding the interplay of Artificial Intelligence (AI) usage, cognitive engagement, AI policy adoption, and creativity and thinking skills among media professionals. The correlation analysis indicates that AI usage is positively associated with both cognitive engagement and creativity, while cognitive engagement itself exhibits a very strong

relationship with creativity and thinking skills. This highlights the critical role of active mental involvement in translating AI usage into meaningful creative outcomes.

Regression results further clarify these dynamics. While AI usage alone does not have a significant direct effect on creativity and thinking skills, cognitive engagement emerges as the most influential predictor, mediating the relationship between AI usage and creative outcomes. This suggests that the benefits of AI tools are realized primarily through their ability to engage professionals cognitively rather than as standalone technological solutions. Additionally, AI policy adoption demonstrates a significant moderating effect, strengthening the relationship between AI usage and creativity. This underscores the importance of organizational frameworks and ethical guidelines in maximizing AI's positive impact on cognitive and creative performance.

Hierarchical regression analysis confirms both mediation and moderation effects. The introduction of cognitive engagement substantially increases the explained variance in creativity, while the inclusion of AI policy adoption further enhances model fit. These results collectively support a model in which AI usage contributes to enhanced creativity and thinking skills primarily through fostering cognitive engagement, with organizational policy acting as a facilitating moderator.

In summary, this study concludes that AI alone is insufficient to enhance creative and thinking outcomes among media professionals. Rather, effective AI integration requires active cognitive engagement and supportive organizational policies. Organizations seeking to harness AI for creative performance should focus on cultivating an environment where professionals critically interact with AI-generated outputs, maintain reflective thinking, and operate within clear guidelines that promote ethical and responsible AI use. These findings have important implications for media organizations, suggesting that strategic, policy-driven AI adoption can optimize the synergy between technology and human creativity while safeguarding higher-order thinking skills.

Recommendations

1. Enhance Cognitive Engagement: Media organizations should encourage active interaction with AI tools, emphasizing critical evaluation, reflective judgment, and iterative refinement to ensure AI complements rather than replaces human creativity.
2. Implement Clear AI Policies: Formal guidelines on AI usage, ethical standards, and accountability should be established to moderate AI's impact and foster responsible experimentation.
3. Promote Digital Literacy and AI Competence: Training programs should enhance professionals' understanding of AI functionalities and limitations, reducing cognitive offloading and improving creative and analytical outcomes.

4. Balance AI and Human Creativity: AI should support routine tasks and data-driven processes while leaving strategic, interpretive, and conceptual decision-making to professionals to preserve originality and higher-order thinking skills.

Future Research Directions

1. Longitudinal Studies on AI Impact: Future research should examine the long-term effects of AI usage on creativity, cognitive engagement, and thinking skills in media professionals, capturing changes over extended periods.
2. Context-Specific Investigations: Studies should explore AI's influence across different media domains (journalism, advertising, digital content) to account for varying workflows, ethical demands, and creative constraints.
3. Mediating and Moderating Factors: Future research can investigate additional factors, such as organizational culture, task complexity, professional experience, and personality traits, that may mediate or moderate the relationship between AI usage and creative outcomes.
4. Qualitative and Mixed-Methods Approaches: In-depth qualitative studies and mixed-methods designs can provide richer insights into how AI affects professional identity, creative autonomy, and ethical decision-making in real-world media settings.
5. Evaluation of AI Policy Effectiveness: Research can assess the impact of AI governance frameworks on creative performance and cognitive engagement, providing evidence-based guidance for organizational policy design.

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