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Toward Understanding AI Adoption in the Global South: An Empirical Study of Creative Practitioners' Experiences in Iran

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Research Article

Keywords: Human-AI Collaboration, Creative Practice, Mental Models, Sociomateriality

Posted Date: July 25th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-10296687/v1

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Additional Declarations: No competing interests reported.

Version of Record: A version of this preprint was published at AI and Ethics on October 9th, 2026. See the published version at https://doi.org/10.1007/s43681-026-01437-0.

Abstract

The proliferation of Generative AI (GenAI) and its growing role in creative industries necessitate studying adoption beyond user groups in the Global North. This paper provides one of the first empirical studies on human-AI interaction and co-creation among creative professionals in Iran, an underexplored context influenced by sociomaterial dimensions and geopolitical constraints. Through semi-structured interviews with 16 practitioners, preceded by surveys (N=129), we found about the participants' perceptions through their mental models, with the primacy of director- and lead-oriented models, their challenges due to technical limitations and systemic inequities, and their bottom-up adaptive strategies. Our discussion highlights the underlying factors influencing the dominance of the director mental model, the importance of control and intelligible explanations for user empowerment, the compensatory labor as an Adoption Tax imposed by access barriers and culturally unrepresentative models, and the emergence of Folk Ethics as the practitioners establish collective, bottom-up norms of responsibility. This study contributes critical implications for the future development of more user-centered, equitable, and contextually aware human-AI co-creative systems.

1 Introduction

Breakthroughs in generative AI (GenAI) capabilities in generating text, images, video, and audio have enabled a wide spectrum of applications. In professional settings, GenAI can play a pivotal role in the creative fields, including graphic design, product design, fashion, architecture, and marketing. While these advances promise significant benefits, they also introduce new individual, social, and societal dynamics into creative workflows, requiring redefined perspectives compared to Human-Computer Interaction (HCI) studies of traditional Creativity Support Tools (CSTs).

AI-powered technologies relatively diverge from earlier CSTs in several ways. First, they are considerably more interactive and introduce an element of unpredictability into the user journey. While their role in automating routine executive tasks is relatively straightforward, during stages like creative ideation, the interaction would unfold less predictably. Second, Interaction with AI as a collaborator in general contexts (Mollick, 2024) and in creative contexts, e.g., (Moruzzi & Margarido, 2024; Vinchon et al., 2023) has become a growing and optimistic area of discussion. Framing the interaction as collaboration and co-creation differs from earlier HCI models in creative contexts, where autonomy in creation was not shared but held either by the human using CSTs or by generative systems (Davis et al., 2015). Third, due to its capacities, GenAI adoption in creative work has raised ethical debates (Jiang et al., 2023; Piskopani et al., 2023), which intersects with broader discussions on AI and the future of work (Constantinides & Quercia, 2025; Gordon & Gunkel, 2025; Jarrahi et al., 2023).

There has been an emphasis on AI primarily serving as a tool or collaborative assistant to augment human creativity, not replacing it, e.g., (Anantrasirichai & Bull, 2022; Fui-Hoon Nah et al., 2023; Vinchon et al., 2023, 2024; Wan et al., 2024). There are also debates regarding the nature of AI creativity compared to human creativity, particularly concerning originality and depth (Garcia, 2024; Medeiros et al., 2025;

Tholander & Jonsson, 2023; Vinchon et al., 2024). Nonetheless, there remains a recognized need for further research into the social and cognitive dimensions of AI integration (Grilli & Pedota, 2024; Liu et al., 2024) and greater attention to its societal and contextual implications (Fui-Hoon Nah et al., 2023; Garcia, 2024; Lyu et al., 2024).

Over the past decade, research on human interaction with AI in creative settings has advanced substantially, largely focusing on users in developed countries. Existing work includes empirical investigations of interactions with AI tools and prototypes across diverse creative domains (Antony & Huang, 2024; Davis et al., 2016; Gero & Chilton, 2019; Gmeiner et al., 2023, 2024; Jeon et al., 2021; Kamath et al., 2024; Karimi et al., 2020; Wadinambiarachchi et al., 2024), as well as theoretical and conceptual analyses examining the relationship between human and AI creativity (Anantrasirichai & Bull, 2022; Davis et al., 2015; Vinchon et al., 2023, 2024). Despite this breadth of scholarship, the experiences of users in the Global South remain significantly underexplored. This gap is increasingly important as growing numbers of individuals in developing countries adopt AI technologies in their everyday creative practices. While prior studies have examined AI integration in the Global South creative contexts (Mim et al., 2024; Qadri et al., 2023), such contributions remain limited in comparison to the broader body of human-AI co-creativity research. Addressing this imbalance is particularly important given that diversity and inclusion are central concerns within HCI (Shneiderman, 2000) and responsible AI research (Delgado et al., 2021; Wang et al., 2023). Moreover, generative AI systems have been shown to be culturally biased and unrepresentative (Qadri et al., 2023), raising further concerns about whose creative practices and values are reflected in these technologies.

Beyond issues of representation, the sociomaterial conditions surrounding technology use in non-WEIRD (Western, Educated, Industrialized, Rich, and Democratic) contexts also warrant closer attention. Sociomateriality emphasizes that technology use emerges through the interplay between users, material artifacts, and social practices (Orlikowski & Scott, 2008). Although such a perspective has been recognized within HCI and CSCW research, e.g.,(Østerlund et al., 2015), they remain scarce in studies of human-AI interaction, particularly in the context of human-AI co-creation.

Taken together, these gaps highlight the need for greater attention to AI adoption and human-AI interaction in creative contexts across underexplored regions, aligning with broader efforts to foster more diverse and inclusive technology development in society.

To help bridge this gap, we chose Iran as our study's context, an underexplored Middle Eastern country in human-AI interaction research. Adopting a relational perspective, our work seeks to address the following questions by exploring the experiences of creative practitioners with AI-based technologies in Iran. As one of the first studies in this context, we take an exploratory stance.

RQ1

How do creative professionals in Iran experience the GenAI integration into their workflows?

RQ2

How do they perceive GenAI, and what underlying factors shape these perceptions?

RQ3

What implications emerge, and how might they inform the future of AI adoption in Iran's creative industries?

We conducted a two-stage study consisting of surveys and interviews. Since this research area is relatively new in Iran and the target population was not clearly defined, we first designed a survey to better understand user group characteristics and to inform the design of the interview phase. A total of 129 individuals participated. We then conducted semi-structured interviews with 16 creative professionals about their experiences integrating GenAI tools into their workflows. The qualitative data from these interviews were analyzed to provide insights for the future development of AI-powered tools for user groups in regions like Iran.

The answers to RQ1 and RQ2, mainly addressed in the findings section, complement each other and set the stage to address RQ3 on a deeper level in the discussions. Overall, our participants primarily found incorporating GenAI as an enhancement in pace, structure, efficiency, or scale of their work. However, these experiences reflected challenges concerning control, wishes for more user-friendly interfaces and intelligible AI explanations, and barriers from sociotechnical issues and unrepresentative AI models.

The descriptions of two-thirds of them indicated collaborative patterns of experience with AI rather than purely tool-based. Our exploration of nuances in the participants' perceptions of themselves led us to interpret five mental models in their interactions, with the prevalence of the director and senior designer models associated with leadership and oversight. We also identified a form of Adoption Tax, referring to the additional labor participants undertook to compensate for access barriers and biases in AI models. Additionally, we found our participants developing bottom-up strategies and Folk Ethics to navigate the interaction- and system-level issues and uncertainties. Synthesizing our findings, we articulate key relationships and discuss implications that can support not only users in Iran but also other user groups in future developments of AI for creative work.

This study makes the following main contributions:

- Providing an understanding of creative practitioners' GenAI adoption and their experience in the underexplored context of Iran.
- Highlighting the roadblocks on AI adoption in the creative fields in Iran, under the umbrella of two broader areas: (a) AI usability for non-technical user groups (regardless of their region) and (b) AI integration for creative work in the Global South contexts.
- Suggesting design- and system-level insights that can support users in the Global South in the future.

2 THEORETICAL GROUNDING

2.1 Situated Actions and Sociomateriality in Creative Practice

We approach our research through the lens of situated actions (Suchman, 2006) and sociomateriality (Orlikowski & Scott, 2008). The concept of situated action, introduced to the context of human-machine interaction by Suchman (2006, p. 70), suggests that "*every course of action depends in essential ways on its material and social circumstances.*" Rather than viewing action as the execution of predefined, rational plans, a situated perspective emphasizes how people use the circumstances they are in to act intelligently. Plans do not determine action; instead, they are produced, interpreted, and adjusted in the course of situated practice (Suchman, 2006).

Applied to creative practice, this concept highlights the fundamentally situated nature of creativity itself. Creativity is not the outcome of a process that follows a detailed, predefined plan of how it will unfold. While practitioners may rely on a set of general steps or heuristics to guide their work, creative processes are neither linear nor fully predictable. In fact, one defining characteristic of creativity is precisely its element of surprise (Boden, 2004).

This lack of fully specified plans becomes even more significant in human-AI interaction, where AI-generated outputs themselves are not fully predictable. In this sense, the unpredictability of AI constitutes an immediate material circumstance that shapes creative action as it unfolds.

In a relevant relational perspective, sociomateriality in human-technology relationship (Orlikowski & Scott, 2008) conceptualizes real-world activities and their material means as an assemblage rather than as separate entities. This perspective emphasizes that human-technology relations are enacted in practice and are neither static nor pre-defined (Orlikowski & Scott, 2008). In the presence of constraints, humans exercise their agency to work with and around the material (technology) agency in order to achieve their goals (Leonardi, 2011). Understanding interaction, therefore, requires examining it within its specific context and circumstances.

Drawing on situated actions and sociomateriality, we approach AI adoption in creative practice in the Global South as an emergent and context-dependent process shaped through the interaction of technical systems, social practices, and broader conditions. Rather than treating AI adoption as a purely individual or technological phenomenon, this perspective directs attention to how creative practitioners negotiate AI technologies within the material realities and constraints of their everyday work. In the context of Iran, these realities include not only the affordances and limitations of AI systems themselves, but also cultural expectations and infrastructural constraints that shape how AI technologies are accessed, interpreted, adapted, and integrated into creative workflows.

This theoretical lens informs our investigation in three ways. First, it guides our examination of how creative professionals experience and incorporate GenAI into their everyday practices (RQ1). Second, it

helps us analyze how perceptions of AI emerge through situated interactions with technological and social conditions rather than through abstract attitudes alone (RQ2). Finally, it enables us to examine the broader implications of AI adoption for creative labor and future industry practices in Iran by attending to the interconnected social and material dynamics shaping human-AI interaction (RQ3).

3 RELATED WORK

Our study builds on related literature in (1) creativity and computer-supported creative work, (2) human-AI augmentation, collaboration, and co-creativity, and (3) ethics and responsibility.

3.1 Creativity, Computer-Supported Creative Work, and Situated Creativity

Boden defines creativity as "*the ability to come up with ideas or artefacts that are new, surprising and valuable*" (Boden, 2004), distinguishing its three forms: combinational (combining familiar ideas in new ways), exploratory (exploring possibilities within an existing style), and transformational (changing the rules of a thinking framework). With the rise of CSTs in the early 2000s, Shneiderman addressed skepticism around them in constraining exploration, arguing that CSTs, like earlier technologies, are tools facilitating innovation, with humans as the creators (Shneiderman, 2007). His principles for designing CSTs emphasize exploration, relieving users of time-consuming tasks so they can focus on exploratory activities. Lubart (2005) categorized computational technologies in creative work support, ranging from tool to facilitator and collaborator. The most advanced role is a colleague, where AI modifies or contributes ideas and engages in dialogue with humans to refine a production. From an HCI view, AI would serve as a partner that is not fully autonomous and supports human creativity.

While dominant perspectives on creativity in HCI often emphasize exploration, ideation, and collaboration with computational systems, such accounts largely assume relatively stable technological infrastructures and access conditions. In Global South contexts such as Iran, however, creative practice may also involve continuous adaptation to infrastructural limitations, sanctions, platform restrictions, and culturally misaligned AI systems. Creativity, in this sense, extends beyond generating novel artifacts and includes the ongoing work of navigating constrained technological environments in order to sustain creative production. Examining AI-supported creative work in these contexts, therefore, requires attention not only to creative outcomes, but also to the conditions and constraints through which creative practice becomes possible. Hence, we treat creativity as a situated phenomenon.

3.2 Human-AI Augmentation, Collaboration, and Co-Creativity

AI advancements have enabled integration opportunities across various creative workflows. Key aspects for such AI adoption include augmenting rather than replacing human creativity, synergy between human and AI, and humans remaining in the loop (Anantrasirichai & Bull, 2022).

AI as augmentation in creative tasks has been a dominant view in recent literature (Gero & Chilton, 2019; Medeiros et al., 2025; Vinchon et al., 2024; Wan et al., 2024). This augmentative perspective is associated with a complementary approach to humans and technology, originating from "Man-Computer Symbiosis" (Licklider, 1960). It is articulated in the updated concept of “human-AI symbiosis” (Jarrahi, 2018). By comparing and contrasting AI and human intelligence, Jarrahi et al. highlight the complementarity and overlap between them as “hybrid intelligence,” which is based on mutual augmentation (Jarrahi et al., 2022).

This framework is closely related to human-AI collaboration and human-AI co-creativity (Davis, 2021; Davis et al., 2016). There has been a paradigm shift from considering AI as a mere tool to a collaborator (Lawton et al., 2023; Palani & Ramos, 2024; Tholander & Jonsson, 2023; Vinchon et al., 2023), and a social agent (Moruzzi & Margarido, 2024). Collaboration is considered essential for tackling challenges and capitalizing on opportunities provided by GenAI (Fui-Hoon Nah et al., 2023), aligning with the overarching notion of “co-intelligence” and how humans can work optimally with AI (Mollick, 2024).

Moruzzi and Margarido’s user-centered co-creativity framework assigns roles to AI beyond a simple tool, from assistant to director (Moruzzi & Margarido, 2024). This shift toward experiencing the interaction as a "partnership" is observed among creative practitioners, leading them to new roles as "orchestrators" of AI capabilities (Palani & Ramos, 2024).

Collaboration in human-AI interaction is reflected in emerging corresponding frameworks such as mixed-initiative co-creativity, where both human and AI can initiate and contribute to work. However, their contributions may not be equal (Deterding et al., 2017; Lin et al., 2023; Yannakakis et al., 2014). Mixed-initiative co-creativity reframes AI as an active collaborator. This model also supports the practicality of the human-AI synergistic relationship in the hybrid intelligence framework (Jarrahi et al., 2022).

Despite growing literature on human-AI collaboration and co-creativity, existing frameworks have largely been developed and studied within WEIRD contexts that assume relatively stable infrastructures, broad platform accessibility, and cultural alignment between users’ intents and AI systems. Emerging research from the Global South suggests that the impacts of GenAI are far from uniform. For example, Mim et al. (2024) demonstrate how text-to-image systems can marginalize local artistic forms in Bangladesh, highlighting how AI technologies may reproduce cultural asymmetries in different contexts. Yet, less is understood about how human-AI collaboration unfolds in settings where creative practitioners must navigate infrastructural constraints, restricted access, and culturally misaligned AI outputs. This gap is particularly salient in Iran, where creative professionals operate under what may be characterized as a form of double isolation resulting from both domestic restrictions and international sanctions. Examining human-AI co-creativity in such settings is therefore important for understanding how collaborative relationships with AI are shaped by broader social, material, and geopolitical conditions.

3.3 Ethics and Responsibility

While the multifaceted studies of ethics and responsibility in digital technologies, e.g., (Noble, 2018) and AI systems, e.g., (Islam & Greenwood, 2024; Jakesch et al., 2022; Rakova et al., 2021) are well-established, such research at the intersection of creative work and human-AI interaction is still emerging. Yet, growing attention is appearing both as a primary focus (Rezwana, 2024; Rezwana & Maher, 2023b) and within human-AI co-creativity discussions, e.g., (Garcia, 2024; Wan et al., 2024).

A central concern is bias and underrepresentation in training datasets, which AI can amplify. This includes racial, gender, and cultural biases (Foka & Griffin, 2024; Qadri et al., 2023; Rezwana & Maher, 2023b; Tao et al., 2024). This matter is particularly salient in AI adoption in Global South contexts, where cultural nuances in creative work shape both the practice and audience interpretation. Many AI systems are designed within Western contexts and trained predominantly on Western-centric datasets, embedding assumptions about aesthetics, language, communication, and cultural values into their outputs. As a result, AI-generated content may marginalize local forms of expression, flatten cultural specificity, or reproduce dominant Western norms as universal standards. While valuable contributions have been made to study this matter (Mim et al., 2024; Qadri et al., 2023), this area still remains underexplored.

Another critical ethical and legal challenge arises from intellectual property, how generative AI leverages collectively produced data, and what happens to attribution or compensation (Jiang et al., 2023). This area is associated with questions about authorship and ownership of the creative product from human-AI co-creation (Mazzone & Elgammal, 2019; Piskopani et al., 2023; Rezwana & Maher, 2023b). In Global South contexts, these tensions may be further intensified by factors such as uneven legal protections and limited regulatory infrastructures. Understanding how people in Global South contexts navigate questions of authorship, ownership, and creative agency in human-AI co-creation remains an underexplored area.

4 METHOD

We conducted a two-phase study using surveys (N = 129) and semi-structured interviews (N = 16). This approach was designed to first quantify the breadth of GenAI adoption and user characteristics, and then explore their experiences and perceptions in depth to understand underlying interplays. The study design and data collection adhered to ethical guidelines for research with human participants and were approved by the institutional board.

4.1 Research Context

This study is situated in Iran, an underexplored context in mainstream HCI and human-AI interaction literature. By focusing on creative practitioners who integrate AI into their workflows, we offer a perspective on AI adoption from a non-WEIRD region. This focus allows for evaluating how they navigate distinct social and contextual factors, such as international sanctions and infrastructural limitations, alongside the practices that emerge in response. Our research seeks to broaden the diversity of user

groups represented in the literature and contribute to the inclusion of their perspectives in global discussions on human-AI interaction.

4.2 Phase One: Scoping Surveys

We designed the survey to map the landscape of GenAI adoption among creative practitioners in Iran. Its objectives were to: (1) gather demographic and professional data, (2) identify common GenAI tools and their applications, and (3) gauge participants' self-assessed familiarity with AI concepts. An optional field invited participants to provide contact information, in case they were willing to participate in the interview phase. The survey results informed the interview design and our purposive sampling strategy. The survey was primarily quantitative, using drop-down menus, multiple-choice items, and 5-point Likert scales.

For sampling, we followed the acknowledged approach in the HCI research community, which is not necessarily probabilistic (Lazar, 2017). We employed convenience and snowball sampling, aiming for at least 100 valid responses to ensure reliable insights. We recruited participants by disseminating the survey on our Instagram and LinkedIn pages. After excluding incomplete entries, we secured 129 valid responses. A summary of participant responses is presented in Table 1, Table 2, and Fig. 1. More details can be found in the Appendices.

Table 1
Distributions of Survey Respondents by Field

Creative Field	Count	Percentage
Graphic Design & Visual Arts	36	27.91%
Architecture & Urban Design	35	27.13%
UX/UI & Product Design	18	13.95%
Advertising & Marketing	16	12.40%
Content Creation (Video, Podcast)	7	5.43%
Other	15	11.63%
Software Dev	2	1.55%
Total	129	100.0%

Table 2
Distributions of Survey Respondents by Work Experience

Years of Experience*	Count	Percentage
Less than 1 year	21	16.28%
1–3 years	31	24.03%
3–5 years	24	18.60%
5–10 years	34	26.36%
More than 10 years	19	14.73%
Total	129	100.00%

* Each range ends before the next one begins (e.g., up to 3 years → 1–3 years).

4.3 Phase Two: Semi-Structured Interviews

This phase aimed to understand users' experiences with GenAI tools, including their perceptions, opportunities, and challenges in this context. We employed purposive sampling to recruit participants who could provide rich, relevant, and diverse insights into our research questions. The recruitment pool consisted of the survey respondents who had volunteered for an interview and individuals who responded to our targeted call on social media.

We determined the sample size through a combination of data sufficiency and reference to sample sizes in comparable HCI studies, e.g., (Lawton et al., 2023; Luger & Sellen, 2016; Wan et al., 2024). We set a base number of 12 participants and ultimately recruited 16. To ensure a comparable yet diverse sample, we recruited from the most prevalent creative fields identified in the survey: architecture, graphic design, visual arts, advertising, marketing, UX/UI design, and content creation.

Our participants included 12 male and 4 female creative practitioners, with ages in the range of 18 to 44 and professional experience spanning from 1 to over 10 years, providing a cross-section of career stages and perspectives (Table 3). In Iran, women’s participation in the formal labor market is approximately 14% (World Bank Open Data, n.d.). Our sample (25% female) thus over-represents women relative to the specific senior professional demographic accessible for this study. This disparity highlights the structural exclusion of women from the very *future of work* technologies discussed here.

We conducted the interviews online via Google Meet, with each session lasting approximately 25–55 minutes. All interviews were held in the participants’ native language (Persian) to ensure they could express themselves with maximum clarity and nuance. We began each interview with a brief overview of the study, followed by open-ended questions about their experiences and comments on integrating AI into their workflows.

Prior to each session, participants received a consent form outlining the study's objectives, data handling procedures, and their right to withdraw at any time. Verbal consent to record the session was reconfirmed at the start of each interview. Personally identifiable information was anonymized in the transcripts, and each participant was assigned an identifier (P01-P16). All data was stored on a secure offline drive accessible only to the authors.

Table 3
Interview Participants by Their Creative Field, Years of Experience in That Field, Adopted AI Tools, and Primary AI Use Case

ID	Creative Field	Years of Experience	Primary AI Tools	Primary Use Case
P01	Industrial & Game Design	5–10	Midjourney, ChatGPT	Concept Art, Narrative Development
P02	Graphic Design	5–10	Leonardo, Midjourney, ChatGPT	Concept Visualization, Client Brief Development
P03	Architecture & Computational Design	> 10	Stable Diffusion, Grasshopper (AI plugins)	R&D, Algorithmic Design, Form Exploration
P04	Architecture & Computational Design	5–10	ChatGPT, Gemini, Grasshopper, Custom Python Scripts	Algorithmic Design
P05	Podcasting	1–3	ChatGPT, Gemini, Eleven Labs, Suno, Whisper	Translation, Multilingual Voice Cloning, Music Production, Cover Art Illustration
P06	Architecture	5–10	Stable Diffusion, Midjourney, Krea, LookX, Flux, and Tensor.Art	Ideation, Image Post-Production
P07	Fashion & Textile Design	1–3	Runway, CALA, Poe	Pattern Ideation, Research Summarization
P08	Software Product Management	3–5	ChatGPT, Midjourney, Copilot	Planning, Ideation, Documentation
P09	Architecture & Interior Design	< 1	ChatGPT, Gemini	Pre-Design Research, Text Summarization
P10	UX/UI Design	1–3	ChatGPT, Copilot	Generating and Editing Text, Analyzing Visual Content
P11	Advertising & Digital Marketing	> 10	ChatGPT, Gemini, Microsoft Designer, Phind	Content Creation, Ideation, Ad Optimization
P12	Fashion Design & Content Creation	1–3	ChatGPT, DALL-E	Business Plan Development, Image Generation
P13	Architecture	5–10	Rendair, PromeAI, Krea	Ideation, Design Development, Image Generation
P14	Graphic Design	5–10	Midjourney, DALL-E, Adobe Firefly	Image Generation

ID	Creative Field	Years of Experience	Primary AI Tools	Primary Use Case
P15	Graphic Design & Advertising	3–5	Midjourney, Stable Diffusion, DALL-E, Adobe Firefly	Poster Design, Ad Campaigns, Social Media Promotion
P16	Product Design & Creative Direction	> 10	Runway, Flux, Midjourney, LimeWire	Image and Video Generation

4.4 Data Analysis

The interviews yielded a total of 10 hours and 5 minutes of recordings. We transcribed the recordings using Dovetail and then manually edited the transcripts to ensure accuracy. We followed an inductive approach and employed reflexive thematic analysis (Braun & Clarke, 2006, 2019), following the six-phase framework: *familiarizing ourselves with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report*.

As native Persian speakers proficient in English, we conducted the initial coding and subsequent analysis stages in English. Throughout this iterative process, we referred back to the original Persian transcripts to ensure accurate interpretation and contextual nuance preservation. The first author conducted open coding for an initial set of six interviews. The second author subsequently reviewed the codes, and both authors met to discuss interpretations and refine the coding approach. This process was repeated for the remaining ten interviews. Theme development was conducted iteratively across multiple rounds, with both authors independently examining emerging patterns and regularly meeting to discuss, refine, and consolidate themes and subthemes. These discussions informed the ongoing development of a shared analytical interpretation of the data.

The analysis resulted in 957 open codes, 6 high-level themes comprising 19 subthemes, as illustrated in the thematic map in Fig. 3. We present our findings organized around these six themes.

We would like to mention that certain themes were shaped by overlapping or multifaceted factors identified in participants' descriptions. Consequently, in some cases, the aggregated category counts exceed the total number of participants.

4.5 Positionality and Rigor

As native Persian speakers with academic and professional backgrounds in design and HCI, our insider perspective facilitated participant recruitment and enabled nuanced communication during interviews. This matter afforded a contextual understanding during data analysis.

We sought to enhance credibility through our two-phase study design and iterative engagement with the data. Confirmability was supported through collaborative analysis, in which the authors regularly discussed emerging interpretations, challenged assumptions, and refined codes and themes throughout the analytic process. Frequent reference to the original Persian transcripts further helped preserve

contextual meaning and ensure that interpretations remained closely connected to participants' accounts.

4.6 Limitations and Reflection

While our analysis was inductive, our background knowledge of creative practices and theoretical approach may have influenced our interpretations and the open-coding process. Although we attempted to advertise our recruitment across a wide range of creative contexts to achieve balanced participation, the proportions of creative fields in our sample cannot be considered fully representative of generative AI users across all creative industries in Iran. Creative industries encompass a wide range of practices, from visual arts to software programming. While our study focused on a group of users whose activities shared relatively similar traits and we excluded recruiting from technically oriented fields, we still covered a variety of creative domains. As we aimed to highlight significant aspects of AI integration in the creative industries in Iran, we maintained a relatively broad lens to capture high-level patterns that warrant attention. These limitations, however, highlight avenues for future research.

5 Findings

5.1 Initial Encounters and Motivations for AI Adoption

The Participants' first encounters with AI, or reasons for adopting it, generally followed three paths. For a slight majority (n = 9), the integration was encouraged by a combination of these paths.

5.1.1 Accidental and Social Discovery.

Half of the participants (N = 8) learned about GenAI through external influences rather than deliberate searching. Media hype, word of mouth, peer conversations, family suggestions, or academic workshops were common entry points. For instance, P02 explained: "*All of a sudden it became a trend, and AI was everywhere, everyone was talking about it, and you felt encouraged to go check out what it is*." Likewise, P10 recalled: "*My introduction was through a news hype at first, and I got curious to see what it was*." A few others discovered AI in professional or interest-based communities; P06 via Discord and *"media related to architecture*," and P12 at professional gatherings.

5.1.2 Motivation by Efficiency, Acceleration, and Utility.

A large majority (N = 11) adopted AI to address practical problems such as accelerating tasks, reducing costs, bridging skill gaps, or improving efficiency. For some, acceleration was central. P06 emphasized using AI "*because of its speed*," contrasting it with "*very time-consuming*" traditional tools. P11 highlighted managing multiple tasks and "*be present in all areas more quickly*." For others, resource constraints or task-specific needs prompted adoption. P01 used AI to augment the capacity of a small creative team, while P09 turned to it to overcome barriers in pre-design research.

5.1.3 Personal Interest in Technology.

These participants (N = 7) started engaging with AI out of intrinsic enthusiasm for technological novelty. Their motivation lay in experimentation rather than immediate utility. "*I can almost say that I am a tech person in general*" and had an "*early interest in AI*" P05. "*I am interested in technology and these stories, and I followed their [AI] news*" P14. P15 described having a "*geeky spirit*" and having "*always been interested in reading about new tools*." P16's exploration reflected a professional habit of staying "*updated*" and "*testing*" tools. Some interests were shaped by education. P03's engagement grew from his master's in architecture and technology, P01, with a background in interactive technologies, was influenced by friends' AI projects.

5.2 AI Integration and Impact on the Creative Process

5.2.1 AI as Enhancement to Workflow: Pace, Efficiency, Structure, and Scale.

All of our participants (N = 16) expressed satisfaction with AI's ability to enhance their creative workflow in at least one of these elements: pace, structure, efficiency, or scale. These benefits included accelerating labor-intensive tasks, structuring chaotic phases of the workflow, and scaling the capabilities of individuals and teams, allowing them to operate at a level previously reserved for larger organizations. This value manifested in several ways, such as filling resource gaps, "*It's kind of like a co-ideator assistant... since we're a small team of two at the core …*" P01, improving pace of work "*In terms of work speed, I'd say it's increased it by maybe 20 to 30 percen*t" P02, and "*It really boosts the quality of your work, and where something used to take six months, now you're getting it done in two*" P04.

5.2.2 The Emergence of Human-AI Collaboration.

As mentioned in 4.2, 12 of 16 participants demonstrated collaborative mental models, moving from one-way commands to an iterative give-and-take dynamic with AI. We traced this shift by the adoption of participatory social language and framing the AI as "*assistant, not just a tool*" P01, an "*everyday assistant*" P08, a "*personal assistant*" P10, or "*a friend I always wanted*" P05. In addition to the language, an iterative dialogue was an indicator of this emergence. Rather than passively accepting outputs, such participants engaged in a cycle of prompting, reviewing, and giving feedback. P01 describes how this "*back-and-forth*" process helped them achieve high-quality content. P08 developed a structure of starting with a broad query and using the AI's response to create a series of more specific prompts to drill down and come to an "*action plan*". This collaborative approach was mentioned by P16: "*Whenever you see it's not quite working, you have to keep giving it [AI] more detail... We have to meet in the middle, and that effort can come from either side. … it [AI] can try to an extent, so it's on us to make that effort*."

5.2.3 Adoption Journey: From Hype to Pragmatism.

Participants' narratives showed an evolution in their understanding and adoption of AI. We found three stages, which align with the "Gartner hype cycle" five phases throughout an emerging technology adoption and its social application [21]. P01 described this process as "*There's a kind of euphoria, or maybe we call it excitement, but that excitement falls off pretty quickly … from the beginning, I was more*

interested in finding that point where the excitement wears off, so we can start getting its assistance from there." The process began with an excitement or curiosity, e.g., "*From the very beginning, I was really eager to get to know AI systems*" P05, progressed to experimenting and encountering practical limitations, e.g., "s*ome other days, it felt like the AI suddenly got dumb*..." P12, and culminated in developing a realistic strategy for integration. This mature outlook was summarized by P15: "*Neither do we expect AI to magically solve everything, nor should we be unaware of how it can get used right now.*"

5.3 Encountered Challenges, System Limitations, Needs

This theme contains participant pain points and unmet needs, revealing a gap between user intent or wishes and system output or limitations. As our participants were from diverse areas of the creative fields, we analyzed their challenges based on their origins. We identified three core areas: the issues related to control, hopes for integrated guidance, and system-level constraints concerning sociotechnical inequities.

5.3.1 Need for Controllable AI.

A near-universal need for greater control over AI outputs was expressed by 15 of 16 participants, whose creative processes were hindered by challenges in three areas. Executional precision (N = 8) was a key issue where AI failed to carry out specific commands. P16, for instance, found it "extremely difficult" to rotate a building's view by a precise 30-degree angle. Poor interaction-based control and lack of clarity about the means of control (N = 8) were another frustration area. P03 criticized "vague" interface sliders that required time-consuming trial-and-error to understand their function. System-level constraints (N = 4) and the participants' lack of control over negotiating them led to challenges for participants like P01. They mentioned that safety policies cause AI to "*shirk the work*" in generating illustrations of a fictional character.

5.3.2 Hope for Integrated and Accessible Guidance.

A modest majority of participants (N = 9) wished for intelligible, context-aware guidance from AI to improve their workflow, noting that traditional manuals would be unhelpful. Their requests fell into three main categories.

Justification-driven explanations for unsatisfactory or unexpected outputs were viewed as an educational opportunity that could turn a challenge into an insight. For instance, P12 shared: "*Maybe if there were something like that... that [explains] why it [AI] doesn't understand something... if it could explain why it interpreted it that way, or why it couldn't produce what you wanted, maybe that could help.*" Another desire was for in-situ feedback, such as real-time assistance embedded in the workflow. P09 envisioned this as: "*If it could give you some kind of feedback, like, 'if you do it this way, you'll get a better result' ... Like, when I'm writing something wrong, it would be really cool …, have you seen Google [search] autocorrects your search? like that.*" P04 wished the AI would provide practical, real-time "*tips*". Finally, this hopes for guidance connected to an appreciation for process transparency, as P05 valued transparent reasoning in

ChatGPT and Gemini that shows their step-by-step plan, allowing them to spot AI misunderstandings early.

5.3.3 Representational Inequities and Systemic Access Limitations.

The study's context in Iran highlighted challenges rooted in sociotechnical inequities. About one-third of the participants (N = 5) experienced a representational collapse where AI models, due to biased training data, flattened nuanced Iranian culture into generic or stereotypical outputs. P01 described the results as coming from a "*Hollywood studio*" trying to depict "*the East*." Similarly, P06 found AI models conflating distinct Iranian architecture with a generic Middle Eastern or Islamic aesthetic. These representational flaws were compounded by systemic barriers (n = 7). Due to international sanctions and economic realities, the participants faced hurdles like requiring complex workarounds for subscription payments (P14) or finding premium tools economically unviable (P08, P14). This sense of digital marginalization is reflected in P07's comment, feeling "*unwantedly trapped in a cage*," possessing the creative talent to leverage these tools but blocked by barriers beyond their control.

5.4 Human-Led Interactions and Adaptive Strategies

The participants developed strategies to navigate the challenges in working with GenAI. We have found these adaptive processes to be a demonstration of participants reclaiming creative agency while trying for effective AI integration.

5.4.1 Iteration and Prompt Refinement.

Iteration in interaction with AI, learning more about its capabilities and limitations, and refining next approaches was the most common practice when our participants faced a challenge (N = 13). This strategy involved actively learning and adapting their interaction through a cycle of experimentation, observation, and refinement, so-called, prompt engineering, to steer the AI toward a desired outcome. P03 shared: "*Through trial and error, we have to test to see what kind of impact it would have on the output*." P04 noted, "*in Gemini, I write a prompt in a certain way, in GPT, I write it differently*," and it was "*completely experimental*". P12 engaged AI in this process: "*I tell it [AI] 'Why did you do it like this?' or 'You made a mistake, why are you saying it wrong?'*"

Some approached more systemically. P05 compared models by feeding the "*exact same prompt*" to them and implanted loops for the AI to request more information if needed. P06 conducted experiments with peers to understand how specific words impact image generation, allowing him to move beyond guesswork: "*when we want a specific kind of form, we can go straight to the right word in our vocabulary and use it [in the prompt]. But someone who's not professional has to keep generating and generating, until they maybe arrive at what they're looking for*."

5.4.2 Task Decomposition.

A quarter of the participants (N = 4) used task decomposition, breaking large creative goals into smaller, AI-manageable sub-tasks. This technique allowed them to maintain high-level creative control while offloading specific labor. P08 used a broad query to identify sub-topics, which he then explored with sequential prompts. Similarly, P05 noted the need for the user to design the overall "*architecture*" or "*algorithm*" of a solution and employ AI to execute functions within that structure. This strategy sometimes manifested as organically applying a *hybrid intelligence* approach [37]. P01 planned to use AI for basic illustration generation and give it to a human artist for the final aesthetic "touch." Aligning with the Diagnostician mental model, P16 decomposed a video task after identifying what AI could not handle: *"...Once I saw what was happening, I changed the whole approach. I modeled that part of the valley in 3D … and then brought it back in and said, 'Okay, now turn this into a video.'"*

5.4.3 Manual Pre/Post-Processing.

Manual intervention before or after AI generation was a common strategy (N = 11) to bridge the gap between AI output and a professional-grade product as a human-in-the-loop approach. Pre-processing involved preparing or cleaning input data; for instance, P06's team manually edited a cluttered photograph, so AI could interpret it. Post-processing, a common practice among creative professionals, involved refining or building on the AI's output to meet certain creative standards. P02 used AI in ideation but had to manually redraw the output to make it usable for professional printing. P13 noted that AI-generated architectural designs have a "*low level of detail*," requiring them to develop it. Similarly, P05 had to "*manually add all the pauses*" to an AI-generated voiceover.

5.4.4 Community-Sourced Learning.

Several participants (N = 7) relied on community resources and peer networks to troubleshoot issues and learn AI utilization techniques. Online communities were a key resource. P06 learned to work with Midjourney on Discord, and for problem-solving, "*everything was YouTube. I mean, it was the experiences of others*". P03 relied on the "*collective wisdom*" on Reddit. P16 leveraged the Midjourney community to find and adapt shared prompts called "seeds". Peer networks were also noteworthy. P10 switched to a new tool because "*most of my friends did … their satisfaction made me feel confident*". P09 improved her prompting based on peer advice, and P15 established an internal community of practice with AI for his team.

5.4.5 Multi-Model Workflow Building.

A few participants (N = 3) developed a multi-model workflow building, creating multi-step workflows where the output of one AI tool becomes the input for another. P05 demonstrated a complex example for his multilingual podcast, using ChatGPT to translate Persian text to English, ElevenLabs for voice cloning, taking the English text as bridge for translation into other languages: "*When I tried translating from Persian to, say, German or Arabic, the issues were much worse. So instead, I'd go through English into other languages*," using Suno to generate background cultural music, and text-to-image tools to design cover art. Simpler workflows included P14, generating an image in Midjourney and refining it in Adobe Firefly and P12 using ChatGPT to formulate a better prompt for DALL-E.

5.5 User Mental Models and Perceptions

A key theme in our findings, addressing how creative professionals perceive their interactions, is related to participants' mental models of both AI and themselves. We identified three primary models of AI and five models of themselves, rooted in prior human-human and human-technology experiences. As Norman defines them, "*In interacting with the environment, with others, and with the artifacts of technology, people form internal, mental models of themselves and of the things with which they are interacting. These models provide predictive and explanatory power for understanding the interaction*." (Norman, 1983, p. 7).

5.5.1 Mental Models of AI.

Tool (N = 4): framing AI as a passive tool for execution. Drawing on experiences with CSTs like Photoshop, they valued AI for enhancing productivity and efficiency. P02 stated, "*... Photoshop came along, where drawing a perfect circle was just one click away. … that was a form of AI too; it was just a tool that made things easier. So when it comes to AI now, I still see it as a tool. You have to learn how to use it, and move faster and work more efficiently.*" P09 commented: "*... its [AI's] design has limitations ... to me, it's just a supporting tool.*"

Collaborator (N = 3): Drawing on social collaborative experiences, this group treated the AI as a collaborator. Describing the AI as a "*thinking partner*," "*assistant*," or "*friend*," their relationship was characterized by a reciprocal dialogue for co-creation or exploring new creative avenues. For instance, P10 said: "*After a while, especially when you've been working on a specific project, it's all saved and it [the AI] understands what you're doing, what your project is about, who you are. So it gets to know you better, and you've learned how to interact with it. I treat it like a human and personal assistant.*"

Hybrid (N = 9): Switching between tool and collaborator frameworks depending on the context. Their approach is largely similar to the second group. However, they reverted to a "*just a tool*" mental model when reasoning about topics like accountability and authorship. For example, P06 compared interaction with AI to "*a brainstorming session with multiple people*," and noted: "*It's our responsibility to make sure AI doesn't go beyond a tool*." Similarly, P14 interacted with the AI as an assistant but concluded, "*At the end of the day, it's just a tool. I can choose to use it or not*."

5.5.2 Mental Models of Themselves.

Director (N = 16): Leading the workflow with intent, orchestration, control, and ultimate accountability. P14 articulated this using a film production analogy: "*For example, Leonardo DiCaprio could never claim that Inception belongs to him. Inception belongs to Christopher Nolan, DiCaprio was an actor. … ultimately, the film is the director's. … It's the same thing here. Maybe the image was generated by it [AI], but the ownership belongs to the person who uses it.*"

Senior Designer (N = 16): Defining tasks, supervising, refining, or building upon AI-generated content. We found Director and Senior Designer models linked to their professional seniority and decision to maintain agency amid perceived gaps in AI capabilities. P15 said: "*Like, go ahead, fill it in, I don't really care what you fill it with, as long as it doesn't cross the red line of my concept and works with the idea*." P13 shared: "*what it [AI] gave us wasn't fully complete, and we had to develop it a bit ourselves. Because in architecture, it still doesn't quite grasp certain details*."

Diagnostician (N = 12): investigating failures by reflecting on their interactions to diagnose and troubleshoot the issues and improve results. P12 described this as: "*I can imagine why it (AI) made this mistake and where it might've gotten that idea from, and then, I try to explain it in a different way so it understands.*"

Explorer (N = 10): Embracing the AI's randomness as a source of serendipity for developing novel ideas. *"it would give me a shape, like arranging triangles in a completely different way, and I'd look at it and think, 'Wait, I didn't have any triangles in my work.' I had Boteh (a Persian pattern) designs, or interwoven fish motifs. But it would substitute those, like it would place triangles where I had imagined fish in a carpet pattern. And then I'd see, wow, it actually turned into a beautiful new motif. It really inspired me …" P07*

Collaborator (N = 5): Engaging in co-creation and mutual learning. "*as that process becomes clearer, I think that kind of 'mind-reading' that often exists between people starts to fade here too, between us and the AI. This clarity leads me to start to understand how it's thinking and arriving at a result … I can guide it better. Or even it helps me think more clearly ... To me, that's a fully mutual experience*" P05.

5.6 Ethical Dimensions

The participants' comments contained considerable patterns related to ethical dimensions. They broadly reflect user-driven folk ethics (Klenk, 2024) and situated ethics for responsible practice, in the absence of established professional regulations and standards. This emergent framework is grounded in a twofold sense of personal responsibility: an outward-facing duty to produce accurate and original work, and an inward-facing duty to maintain one's own critical thinking and creative integrity. Participants extended discussions of AI ethics beyond questions of individual responsibility to consider the broader conditions surrounding AI development and use. Their reflections highlighted how unequal access and cultural marginalization shape the experience of AI adoption in underrepresented contexts such as Iran.

5.6.1 Personal Responsibility in Ethical AI Use and Contested Norm of Disclosure.

A primary responsibility identified was verifying AI-generated information, with participants acting as a "*human filter*" (N = 5). P09 learned early that AI data can be inaccurate, adopting fact-checking as a core principle: "*you have to check it yourself*," which is due to the issue known as "hallucinations." P12 stated she would "always check everything" because AI sometimes produced "*nonsense*," saying things that "*didn't even exist*." P10 viewed using unverified data as "*the irresponsibility of the person doing the work*."

Another key responsibility was maintaining creative integrity. P06 practiced critical self-awareness to prevent the tool from overpowering his vision: "*Sometimes I check in with myself and ask: … is it [AI] simply helping you visualize what you already had in mind, or is it actually steering your mind somewhere else?*" This matter aligns with broader concerns that over-reliance on AI could cause stylistic homogenization and a decline in human originality. P07 drew a clear line: "*The idea must belong to the designer*," with AI handling tedious execution. P15 argued a designer's value lies in their ideas: "*a designer never boasts about the design they produced; they boast about the ideas behind it*." This responsibility extended to the creative community, as P01 mentioned the use of AI to mimic an artist's style was "*very wrong*."

We found transparency in disclosing AI use as a contested professional norm. One perspective (N = 5) framed disclosure as an ethical imperative. P03 called it "more professional and ethical to state their existence," noting new requirements to acknowledge AI adoption in scientific journals. P09 emphasized, "*it should be written that... AI made this,"* to accurately attribute potential errors. P16 highlighted disclosure due to the proliferation of AI-generated images without labels, which could gradually distort reality. In contrast, a few (N = 3) viewed AI as simply a tool requiring no special disclosure. P06 stated, "*it's not important... It makes no difference*," signifying the final output rather than creation means. P14 agreed: "*it's not important to the user … the final output is what's important, and the accountability lies with the person who is ultimately delivering that output."* This reflects an ethical reasoning divide: process acknowledgment or the creator's accountability for a product.

5.6.2 Authorship, Ownership, and Attribution in Human-AI Collaboration.

Authorship and ownership of human-AI co-creation were points of contention (N = 11). The participants' views stemmed either from a director-oriented model claiming sole ownership or collaborative models suggesting "*shared copyright*" P16, reflecting potential uncertainty about where creative value originates in a human-AI partnership. This debate highlights the inadequacy of current intellectual property frameworks for co-creation, as P10 articulated: the ownership boundary is "*so gray and it varies from case to case that I feel a bit of confusion*."

The director model of reasoning ties the authorship and ownership to the initial vision and lead. It was mostly emphasized by P14. Using a film production analogy, he mentioned that just as a director is considered the author despite the contributions of actors and crew, the human user who directs the AI is the author of the final work. In direct contrast, P16 mentioned shared ownership, suggesting both the AI and the human holding copyright in a percentage-based attribution based on contribution. A third dimension introduced by P01 focused on the ethics in training datasets, concerning the potential for AI models to infringe on the intellectual property of artists whose work was used without consent, stating: "*...if I start using this tool to misuse the content of a specific artist... I think this is very, very wrong and should not be done*." This perspective extends responsibility back to the model's origins, suggesting an ethical debt that precedes AI adoption.

5.6.3 Fair Access and Cultural Impact.

The participants' comments expanded the ethical discussion from individual responsibility to systemic inequities and geopolitical aspects in the global AI ecosystem. Barriers to access, economic disparities, and culturally biased models highlight that an ethical AI must also be equitable and inclusive.

Five participants faced structural barriers, often invisible in discussions centered on the Global North. P14 mentioned the impossibility of directly paying for premium subscriptions from Iran due to financial sanctions, compounded by high rates compared to local incomes. He explained that even for those who can afford it, the payment process is difficult, concluding, "*the only thing that prevents the use of this, in my opinion, is this part, which is also out of our hands.*" P07 regretted that payment barriers meant "*we are using version three... which they [users in developed countries] don't even use anymore*."

These access issues were intertwined with concerns about cultural homogenization (N = 3). P01 worried AI's current trajectory, with culturally and regionally biased datasets and restricted access, would foster a globally homogenized aesthetic: "*...local content will face a problem, meaning everything will move towards a fake universalism. Everything will look universal, but its essence is not universal*."

6 Discussion

Drawing connections across our findings and synthesizing them in light of existing studies and established frameworks, we highlight the implications for the future development of GenAI in creative practices. They aim to improve outcomes for user groups in underexplored contexts, such as our study in Iran, as well as for broader communities in the creative industries.

6.1 The Primacy of the Directorship Mental Model: Unpacking the Multifaceted Origins

The *Director* and *Senior Designer* mental models were prominent among our participants (see 5.5), especially in contexts with professional stakes such as originality, authorship, ownership, and accountability. This dominance is consistent with empirical findings that refer to similar roles like *leadership* (Rezwana & Maher, 2023b) and *project manager* (Palani & Ramos, 2024).

We argue that, beyond serving as an adaptation strategy to encountered challenges, the primacy of creative directorship is a proxy for user accountability and responsible AI adoption. Unlike *casual creators* who interact with AI for a creative experience (Davis et al., 2016), creative professionals must produce a deliverable for a client, and this product is at stake. This real-world accountability incentivizes users to direct the process rather than sharing control with AI as an equal partner. This explains the significance of leadership and retaining full control, and why this matter is likely to continue remaining significant.

Besides accountability, other factors explain this director- and lead-oriented stance. Our participants' senior-level roles (see Table 2) and holding the lead creative agency would be one factor. Moreover, while GenAI can be considered a type of CST, its integration in creative work remains debated, e.g., (Jiang et al., 2023; Piskopani et al., 2023), which could influence how users perceive AI adoption and encourage a more cautious approach. This matter connects to established values within their creative work.

Concerns and resistance to integrating new technology in work settings have historical precedents from the Industrial Revolution to digital technology advancements. More specifically, in CSTs, there is a background of skepticism around incorporating them in creative workflows (Shneiderman, 2007). In light of this context, we believe the primacy of the *Director* and *Senior Designer* mental models in our study points to how the value of creativity is defined for creative practitioners and the culture of their professional community. This matter is particularly in alignment with what Suchman (2006, p. 1) indicates: "*cultural conceptions have material effects*."

Coeckelbergh's perspective is also highly relevant here: "*All technologies, as created and used by humans, are related to humans*," describing social robots as instruments that are "*instruments-in-relation: they are always connected to humans and the social-cultural fields in which they operate*" (Coeckelbergh, 2022, p. 2057). This perspective also reflects a sociomaterial understanding of technology, emphasizing that human-AI interaction is shaped not only by technological capabilities, but also by the social and cultural conditions in which these technologies are embedded and used. In our study, this concept of an *instrument-in-relation* manifests in the practitioners' experiences in relation to: (1) their own workflows and (2) their community's views on AI integration.

Moving forward, we suggest the following considerations. First, sustainable human-AI co-creation requires support from professional practice frameworks and regulations, which are beyond system design. This includes validation and transparent guidelines from each creative industry to address concerns and controversies and clarify solutions. Second, these established foundations are essential before users can be trustful enough to engage in mixed-initiative co-creativity, where collaboration can be more equal and the human lead can reliably become an option.

6.2 From Understanding Frustration to Facilitating Effective Adoption

Our findings highlight the pain points participants faced and their adaptive strategies for integrating AI tools into their workflows, underscoring what could empower users. Their challenges manifested in (1) not being able to do what they intended and (2) not receiving the output they expected, i.e., gaps between intent/expectation and experience. These real-world experiences warrant attention, as they provide valuable design and development implications. We highlight user means of control and intelligible AI explanations as two enablers for effective *human-to-AI* and *AI-to-human* communication, which fosters co-creation with AI (Rezwana & Maher, 2023a). This becomes particularly significant in underrepresented contexts such as Iran, where users need to compensate for culturally biased or otherwise misaligned AI outputs (see 6.3). In such settings, control and intelligible explanations are not

merely usability features, but mechanisms that support users' agency in navigating, adapting, and working around the limitations of AI systems in their context.

6.2.1 Control Features: A Medium for Delivering Creative Intent.

A predominant experienced challenge for the participants was turning intent into output under control and toward a desired direction. The participants devised bottom-up strategies to regain control. However, such limitations can relegate the capacity of GenAI in creative work to aid tools rather than instruments usable across the full creative process. This gap echoes the *Gulf between User Expectation and Experience* (Luger & Sellen, 2016) and highlights a central challenge in creative workflows.

This aligns with recent HCI research identifying adaptable user control as key for the successful integration of GenAI into knowledge work (Yun et al., 2025) and the steerable interfaces that support direct manipulation and iterative creative workflows (Riche et al., 2025). Beyond providing user-friendly features for control as a general principle in UX design (Norman, 2013), the importance of control in creative contexts is greater: it is a way for users to convey their creative values and authentic intent to AI. As Boden notes in the context of transformational creativity with AI: "*The problem is not to make the transformations: that is relatively easy. What's difficult is to state our aesthetic values clearly enough to enable the program itself to make the evaluation at each generation*," comparing it with regulated scientific domains where encoding values into automation is easier (Boden, 2007, p. 93).

Therefore, control features can be understood as a medium for communicating user intent. While our participants' bottom-up strategies enabled exerting control, these methods would impose a cognitive burden. Since creative workflows are iterative and non-linear, it is crucial that AI adoption does not introduce additional friction. Thus, facilitating control through top-down solutions, such as HCI design, empowers users to achieve their creative intent with less frustration, not settle for suboptimal results, and integrate AI seamlessly into their work as a consistent collaborator rather than a single-task tool.

6.2.2 Intelligible Explanations: A Bridge on the Gulf of Intent/Expectation and Experience.

In response to the participants' challenges, a consistent finding was the desire for more transparent and intelligible GenAI systems, wishing AI to explain a reason and guide them toward better results (see 5.3). This hope stemmed from practical needs for troubleshooting and accelerated learning. It aligns with explainable AI (XAI) and human-centered AI core principles, which emphasize system intelligibility as crucial for facilitating effective human-AI collaboration (Chromik et al., 2021). It also connects to recent work on AI systems as pedagogical agents that can scaffold user learning and skill development (Drosos et al., 2025).

Creative professionals require explanations that are not merely descriptive, e.g., what the AI did, but educational and actionable, e.g., how the user can do better. This reframes XAI from serving technical

purposes for AI engineers to interaction-focused feedback for non-technical users. XAI could be incorporated into providing a usable resource for creative professionals, serving as *AI-to-human communication*, which has been found to influence user perception of AI as a collaborator and enhance the user experience in co-creation with AI (Rezwana & Maher, 2022). Throughout our study, we noticed that a few participants with some computational familiarity, though not necessarily technical expertise, had less challenging interactions. This observation reinforces the value of intelligible explanations in bridging this knowledge gap for all users.

Therefore, intelligible and accessible AI explanations in human-AI co-creative systems would serve as a bridge and yield three key benefits:

- Aligned Mental Models. By clarifying its processes, AI helps users develop more accurate mental models of its capabilities, aligning their expectations with reality and leading to more effective interactions.
- Enhanced Creative Agency. Actionable guidance reduces frustrating experimentation, enabling users to exercise precise control over the process to realize their intended vision.
- Greater Equity. By bridging the knowledge gap, XAI lowers the barrier to entry and facilitates challenge management. Intelligible systems foster equitable opportunities for AI adoption across users with diverse computational literacies, mitigating the marginalization of less technical creative professionals.

6.3 Sociotechnical Realities of AI Adoption in Iran

The experiences of creative professionals in Iran serve as a critical lens, reflecting the social, contextual, and material issues within the current GenAI ecosystem. Their struggles demonstrate how interaction with AI is shaped by cultural context, economic realities, and global power structures. Their navigation of this landscape highlights systemic inequities, from representational harm to a usability divide that marginalizes less-resourced users.

6.3.1 The Adoption Tax.

The experience of creative practitioners in the Global South is not as straightforward as that of users in the Global North. They have to overcome barriers and put additional labor, which we conceptualize as the *Adoption Tax*.

Rather than democratizing creative production, the introduction of GenAI into the Global South introduces a regressive tax. This tax falls most heavily on those who possess the fewest infrastructural resources to pay it. The Adoption Tax is not a singular friction; rather, it is a multi-layered toll levied across two distinct dimensions, as structured in Table 4 below.

Our study shows that creative practice in Iran is a situated synchronization of aesthetic intent with infrastructural constraints. For the Iranian practitioner, creativity involves a dual labor: the artistic labor of

composition and the invisible labor of maintaining access to the tool and correcting its cultural misalignments.

Table 4
Analytical Dimensions of the Adoption Tax

Tax Component	Definition	Sociotechnical Consequence
The Access Levy	The temporal and material cost required to bypass geopolitical, financial, and network restrictions.	Structural stratification of tool access; geopolitical exclusion by design.
The Correction Levy	The active labor of editing, manual post-processing, and filtering to remove "Orientalist" tropes.	Shift from creative orchestration to uncompensated reparative labor.

- **The Access Levy: Infrastructure as a Constraint**

In a globally networked economy, technological access is often treated as a baseline assumption. For Iranian practitioners, however, infrastructure is itself an active adversary. To even begin interacting with a GenAI model, users must pay a high *Access Levy*. Because payment networks like Stripe or Visa are blocked due to international sanctions, practitioners cannot simply purchase a subscription. As P14 noted, this necessitates complex, high-fee workarounds through informal secondary markets and financial proxies.

When these financial barriers are combined with domestic filtering, practitioners find themselves "*unwantedly trapped in a cage*" (P07). The material reality of this levy is that while Western users seamlessly employ state-of-the-art models, marginalized practitioners are structurally relegated to obsolete, free versions (P07). This dynamic converts what could be a tool of global empowerment into an engine of developmental disparity, demonstrating how geopolitical forces are directly inscribed into the user experience of creative practitioners.

- **The Correction Levy: Labor of Algorithmic Bias**

Within mainstream HCI literature, algorithmic bias is typically conceptualized as an outcome-based failure; an erroneous classification, a skewed recommendation, or an offensive generation. However, by centering our analysis on the lived experiences of creative practitioners in Iran, we argue that algorithmic bias must also be understood as a process-based structural inequality. We conceptualize this as a *Correction Levy*: the uncompensated, invisible labor systematically levied on marginalized users to align culturally misrepresentative algorithmic outputs with their local and historical realities.

Once access is secured, the practitioner must pay the *Correction Levy*. This represents the active, human-in-the-loop repair work required to undo the "data colonialism" (Couldry & Mejias, 2019) embedded in Western-centric training sets. When models are trained on datasets that flatten non-WEIRD cultures, they engage in what Qadri et al. (2023) term "representational harm". This is evident when P06 attempts to

generate Iranian architectural concepts, only to receive a generic "*Islamic-Middle Eastern*" caricature that completely erases the distinct spatial, material, and geometric logic of historic Persian architecture. This algorithmic flattening is especially concerning in fields like architecture, where it can promote a monolithic global aesthetic and diminish the very diversity that practitioners are responsible for preserving.

To make these outputs professionally viable, practitioners cannot rely on the AI's collaborative agency. They must exert manual pre- and post-processing labor (P02, P13). This is not creative augmentation; it is compensatory, uncompensated maintenance work. The practitioner is forced to act as an algorithmic mechanic, repairing the system's cultural deficiencies before actual creative design can commence. This additional burden of time and cognitive effort is the result of a system design that fails to account for diversity, reframing the issue from a simple data gap to the matter of equity and justice.

6.3.2 The Usability Divide: Marginalization by Design and the Rise of Community Scaffolding.

Beyond cultural bias, the very design of many powerful AI tools creates another significant sociotechnical barrier, marginalizing less tech-savvy users and putting unfair pressure on those who cannot keep up with the rapid pace of technological change. The strong reliance on community learning is a direct symptom of the poor usability and non-intuitive design of many powerful AI tools. Users are not turning to YouTube and Discord for advanced tips; they are often seeking basic usability instructions because the tools themselves are opaque and difficult to master. Even a tech-savvy product manager (P08) found Stable Diffusion "*really hard to work with*" due to its overwhelming and confusing interface. Moreover, the non-intuitive design adds a weight of division for users in non-English speaking countries, as those who are not proficient in English won't have the privilege of learning from English resources.

In this context, the community effectively creates the user-friendly documentation and practical, use-case-driven tutorials that the tool developers have failed to provide. However, this reliance on external communities also creates an inclusivity problem, as it requires users to navigate yet another platform simply to learn the basics, placing another hurdle in the path of equitable AI adoption.

This points to a significant product opportunity for AI tools that prioritize a superior user experience with in-tool guides and context-aware help. Beyond skill acquisition, these communities also build confidence and validate tool choices in a rapidly changing landscape, acting as a trusted filter and recommendation engine, where social proof plays a key role in adoption decisions. For AI companies, fostering a strong community is therefore not merely a marketing activity but a core part of the product experience that drives adoption and retention.

6.4 The Ethical Tightrope: Authorship, Authenticity, and Responsibility

The integration of GenAI into creative workflows and positioning it as an active collaborator rather than a passive tool destabilizes traditional definitions of authorship, authenticity, and responsibility (Fathima R & Beevi. A, 2025; Singh et al., 2025). This reframing necessitates a re-evaluation of intellectual property and professional accountability. In the absence of established industry norms, the practitioners in this study constructed *Folk Ethics* to navigate the complex questions of authorship, ownership, creative integrity, and their duties toward clients and their creative product.

6.4.1 From Creator to Director: The Shifting Identification of Authorship in Human-AI Collaboration.

The question of "who is the author?" in human-AI co-creation is not a purely technical or legal matter but a deeply personal and professional one, shaped by users' evolving mental models of AI and of themselves. Our findings revealed a self-directed negotiation of this question among the creative professionals, where the self-perception as a *director* provided a framework for some of the participants to rationalize their sole creative authorship and ownership, even when their interaction suggested a relatively collaborative relationship with the AI.

This perspective deconstructs the creative process into distinct roles: the high-level orchestration, vision, and intent belong to the human director, while the AI is relegated to the role of crew members executing that vision. This aligns with legal and philosophical frameworks that traditionally tie authorship to a "natural person" who exercises "subjective judgment" and maintains "control of its execution" (Copyright Office, Library of Congress, 2023). This assertion of sole authorship, however, exists in tension with the AI's unpredictable contributions (Hutson, 2025).

The collaborative mental models, dominant in our findings (see 5.5), are instrumentally valuable for fostering creative dialogue. Yet, when the focus shifts to the product's authorship and ownership, the concepts of collaboration and partnership become controversial. This conflict reveals that authorship and ownership are not fixed technical definitions. Rather, they are fluid social and professional constructs that users tailor to maintain their agency in a landscape where legal frameworks are still struggling to adapt to the capacities of GenAI as an emerging technology (Zhang & Li, 2024). The debate over authorship and ownership is, therefore, not just abstract legal opinions; rather, a proxy for a deeper existential debate about what it means to be a *creator* when the tools of creation are becoming increasingly generative and can automate large portions of the *how* of creation, forcing a re-evaluation of what constitutes the core creative act.

This suggests the need for establishing guidelines by authorities who regulate practice in each field to clarify guidance concerning AI integration and human authorship. Furthermore, future legal and ethical frameworks for AI authorship must become more nuanced. A binary *human author/no author* system may prove insufficient, and future models might need to consider a spectrum of authorship based on the level of human/AI creative input and the nature of the collaborative process.

6.4.2 Authenticity as Labor: Defending the Artistic and Designerly Voice.

As the findings illustrate, the struggle to maintain an artistic voice against AI-driven homogenization is redefining the nature of creative work. This matter is more than a philosophical concern; it is a threat to the professional identity of creators, whose value is often tied to a distinct creative product. Consequently, maintaining authenticity in the age of AI is not a passive state but an active form of strategic labor.

The practices described by participants, such as P01 noting that a critical new skill is the ability to navigate away from this generic mainstream to produce a "*unique output*," and P06's periodically engaging in a self-reflection to assure AI is just helping them develop their own ideas, represent a fundamental shift in creative value. As AI increasingly automates execution, the economic value of a creative professional migrates to directing, curating, and critically refining AI outputs. In this new paradigm, the creator's role is to authenticate the work, to infuse it with a unique artistic and designerly vision. Authenticity is no longer just an inherent quality of the work; it becomes an ongoing labor and a deliberate service the professional provides.

6.4.3 Forging Folk Ethics: Emergent Moral Ecologies in a Regulatory Vacuum.

How do creative professionals navigate the ethical ambiguities of human-AI collaboration when both local institutions and global technology corporations provide no support or guidance? In the context of Iran, practitioners operate within a form of double isolation. The domestic state actively regulates digital communication through access restrictions rather than systemic AI policy, copyright protections, or algorithmic fairness guidelines. Internationally, sanctions often exclude users from the platform's terms of service and customer protections. Together, these conditions create a regulatory vacuum in which formal guidance for responsible AI use is not present.

Rather than resulting in ethical uncertainty or inaction, this vacuum has prompted practitioners to develop their own informal norms and responsibilities for AI use. We characterize these collectively developed practices as a form of *Folk Ethics*: bottom-up ethical understandings that help practitioners navigate uncertainty, preserve creative agency, maintain legitimacy, and use AI responsibly. We position this phenomenon as an emergent moral ecology; a situated, collective system of self-regulation that fills the void left by formal institutions and platform providers (Pavlović & Hafner Fink, 2024; Santos-Lang, 2015; Tan, 2025).

This moral ecology operates through three localized ethical principles:

- **Algorithmic Skepticism as Professional Responsibility**

Because AI systems can generate inaccurate, misleading, or culturally inaccurate content, practitioners viewed verification and oversight as an essential professional responsibility. Serving as a "*human filter*" (P09, P12) and carefully reviewing outputs were considered necessary safeguards. As P10 suggested, presenting unverified AI-generated content amounted to professional irresponsibility. In this context, skepticism is not merely a quality-control practice but an ethical duty.

- **Disclosing AI Use Controversy**

A portion of ethical tension involved the responsibility to disclose AI use, with attitudes diverging based on professional context. This aligns with developing legal frameworks that are pushing for greater AI transparency (El Ali et al., 2024). However, some of the professionals expressed uncertainty or saw disclosure as unnecessary, viewing AI as just another tool. We interpret this divergence as reflecting differences in how professional communities define legitimate authorship and the value of creative work, as well as in the extent to which they accept AI as part of the creative process.

- **The Mandate of Labor-Infused Authenticity**

In the absence of clear copyright laws or intellectual property frameworks within Iran, the creative community has established an informal *honor code* regarding the threshold of authorship. Our findings reveal a shared community consensus: utilizing raw, unmodified AI generations is an act of creative theft, whereas injecting human labor through manual modification (P02, P06) or task decomposition (P16) ethically licenses the practitioner to claim sole authorship. By actively modifying the output, the designer infuses their own *labor* and *designerly voice* into the artifact, transforming a generic algorithmic asset into a personal creative statement. This bottom-up ethical reasoning allows practitioners to distinguish between lazy exploitation and legitimate, responsible co-creation.

7 Future Work

Further work is required to understand how AI systems can be designed to better accommodate cultural and contextual diversity, moving beyond one-size-fits-all models toward more inclusive, locally responsive, and equitable AI ecosystems. The limitations of this study point to directions for future research. Comparative studies could examine how similar dynamics unfold across other Global South contexts or within different creative domains. Longitudinal research would be invaluable for tracking the evolution of human-AI co-creation practices as these technologies mature. Moreover, future work could gain greater specificity by focusing on users from a single creative domain or on a single AI technology. Finally, research grounded in design justice, including participatory design with underrepresented communities, would be an impactful approach for surfacing hidden costs of inequity and for guiding the development of more inclusive AI futures.

8 Conclusion

Through a sociomaterial lens to understanding user experiences, this study has investigated how creative professionals in Iran adopt GenAI under contextual and material constraints. Our findings on users' perceptions, challenges, and attitudes reflect how these practitioners actively preserve creative agency by directing the process and employing a repertoire of adaptive strategies.

As one of the early studies of human-AI interaction in the creative context of Iran, this work has taken an exploratory stance. By grounding our inquiry in user experiences, we have surfaced interconnected areas and articulated underlying relations that merit deeper investigations. We demonstrate how the dominance of director mental model could be rooted in user accountability and how they define the value of creative work. We highlight how intelligible AI explanations could bridge the gaps between user intent and experience, leading to enhanced creative agency and greater equity in AI adoption among creative professionals. Beyond the interaction, we discuss the systemic issues and inequities impacting AI adoption. We introduce the Adoption Tax, as the labor imposed by access barriers and unrepresentative models, and explore Folk Ethics, the emergent frameworks practitioners develop to navigate unresolved questions of authorship and responsibility.

We call for expanded scholarly attention to the adoption of human-AI co-creative systems in the Global South contexts, which would not only benefit users in underexplored contexts like Iran but also would contribute to the broader creative professional communities adopting AI.

Declarations

Author Contribution

F.H. and I.S. jointly conceived and designed the study, developed the methodology, collected the data, conducted the data analysis, interpreted the findings, and drafted the manuscript. F.H. prepared the figures, and I.S. prepared the tables and charts. Both authors reviewed and approved the final manuscript.

Acknowledgement

We appreciate our study participants for sharing their time and experiences.

Data Availability

The data generated and analyzed during the current study are not publicly available due to privacy and confidentiality agreements with the human participants. However, the de-identified data may be made available by the corresponding author upon reasonable request.

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Footnotes

1. This protocol served as an overall guide for the semi-structured interviews. The questions and their sequence were adapted in real-time to follow the flow of each conversation and to explore specific areas raised by the participants in more depth.
2. The verbal consent served as a reconfirmation. The participants had already received a consent form and provided their agreement before the interviews. The form outlined a brief overview of the study and interview, explained how their data would be recorded and used, and clarified that participation was voluntary and that they could withdraw at any time.

Figures

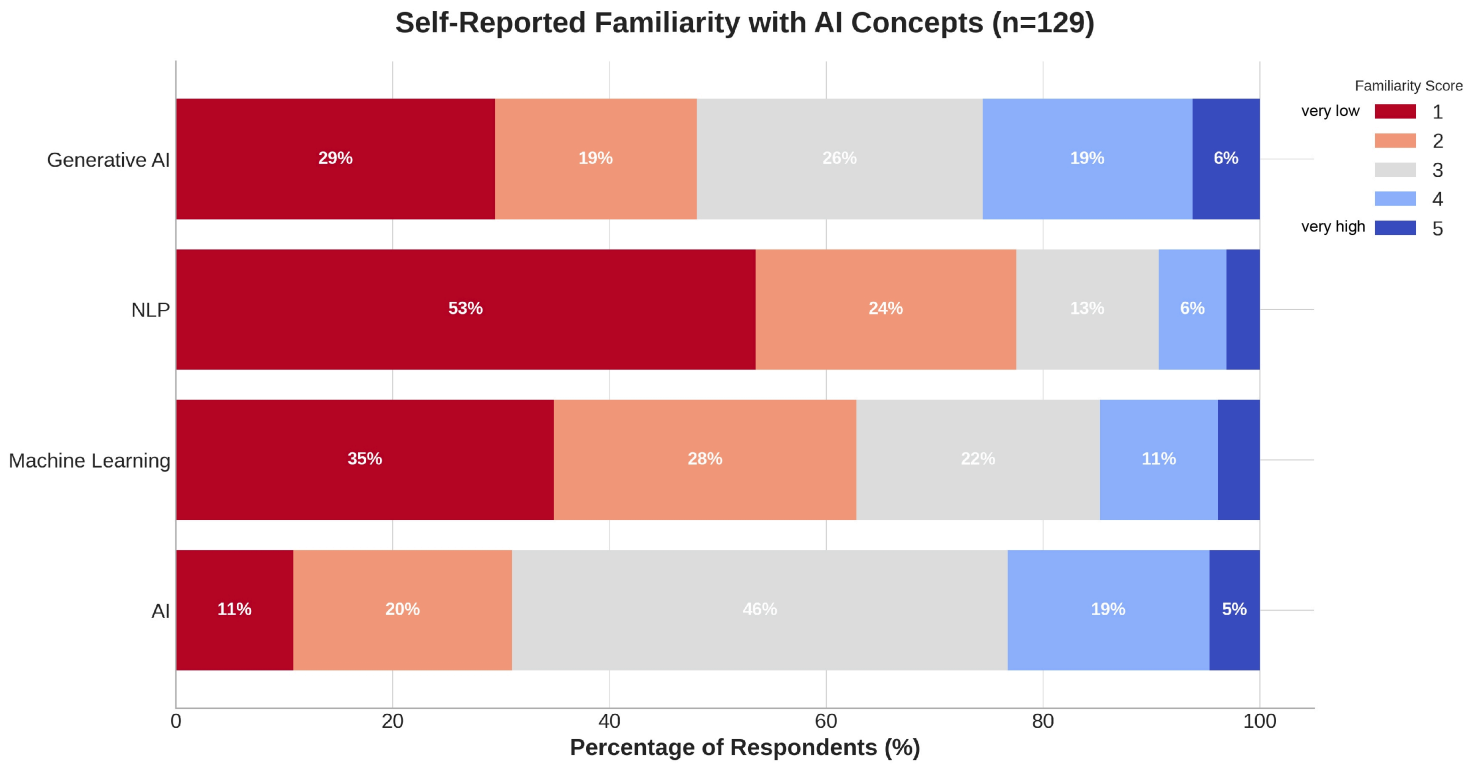


Figure 1

Survey respondents' self-reported familiarity with AI concepts. Bars from left to right represent familiarity levels from 1 (very low) to 5 (very high).

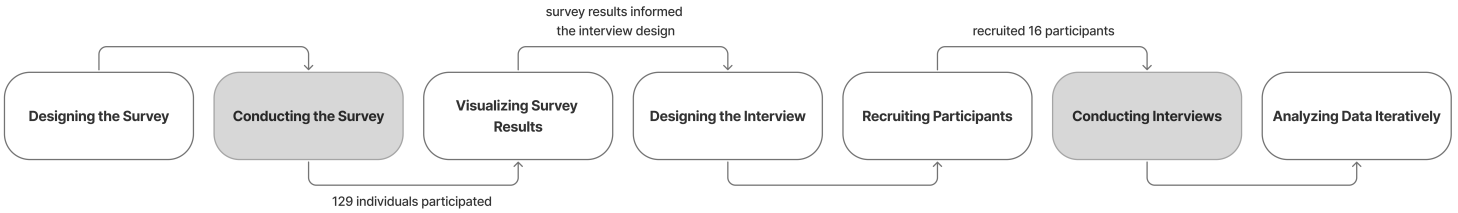


Figure 2

Process of conducting the study.

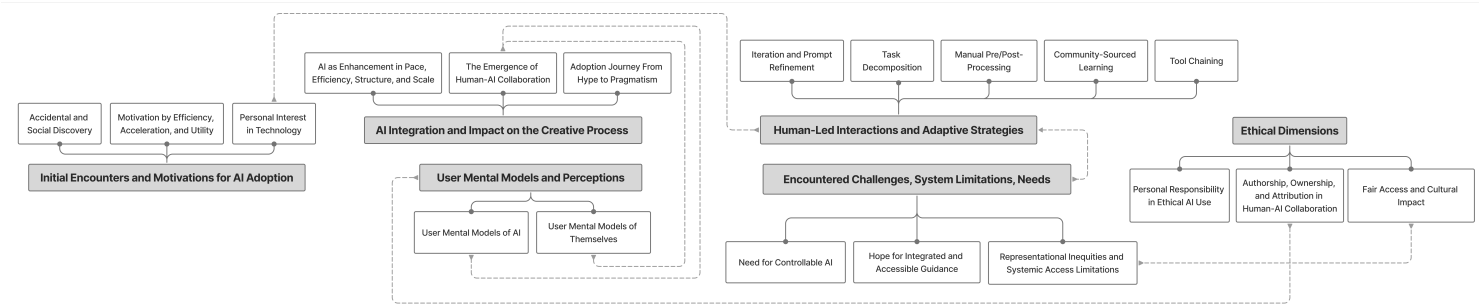


Figure 3

Thematic map of the findings. Dashed lines represent interconnections.

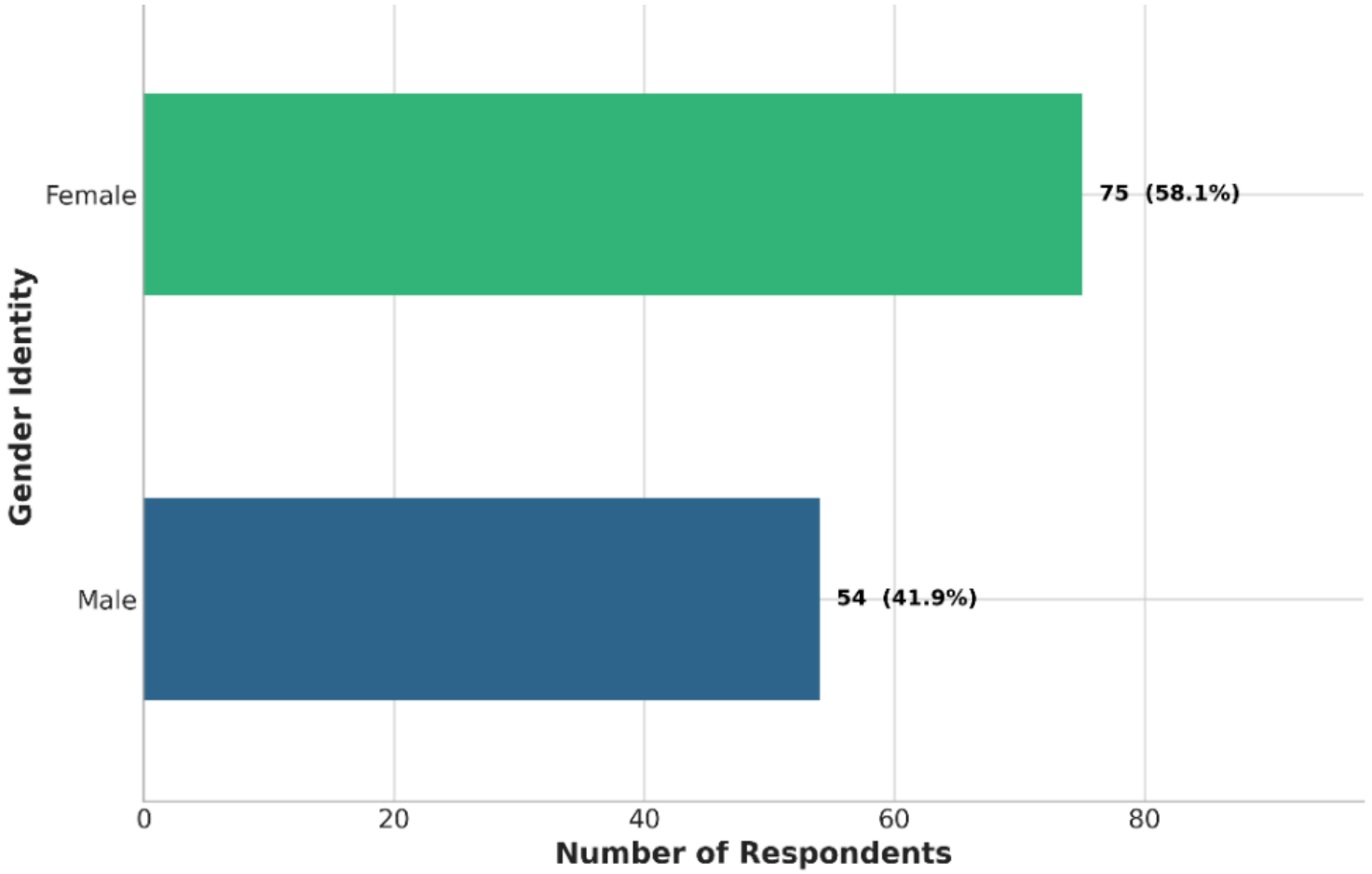


Figure 4

Distribution of respondents by gender identity

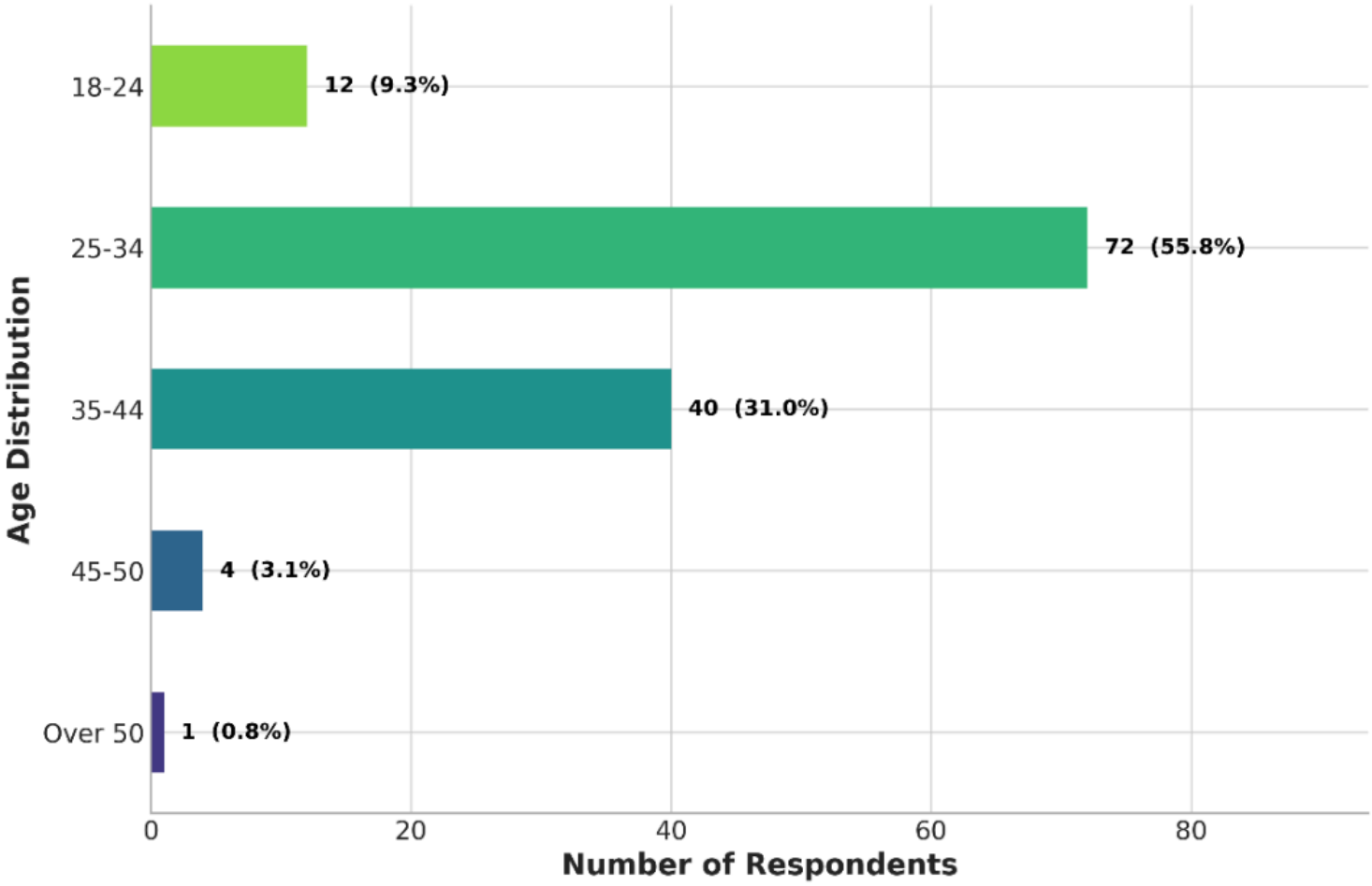


Figure 5

Distribution of respondents by age

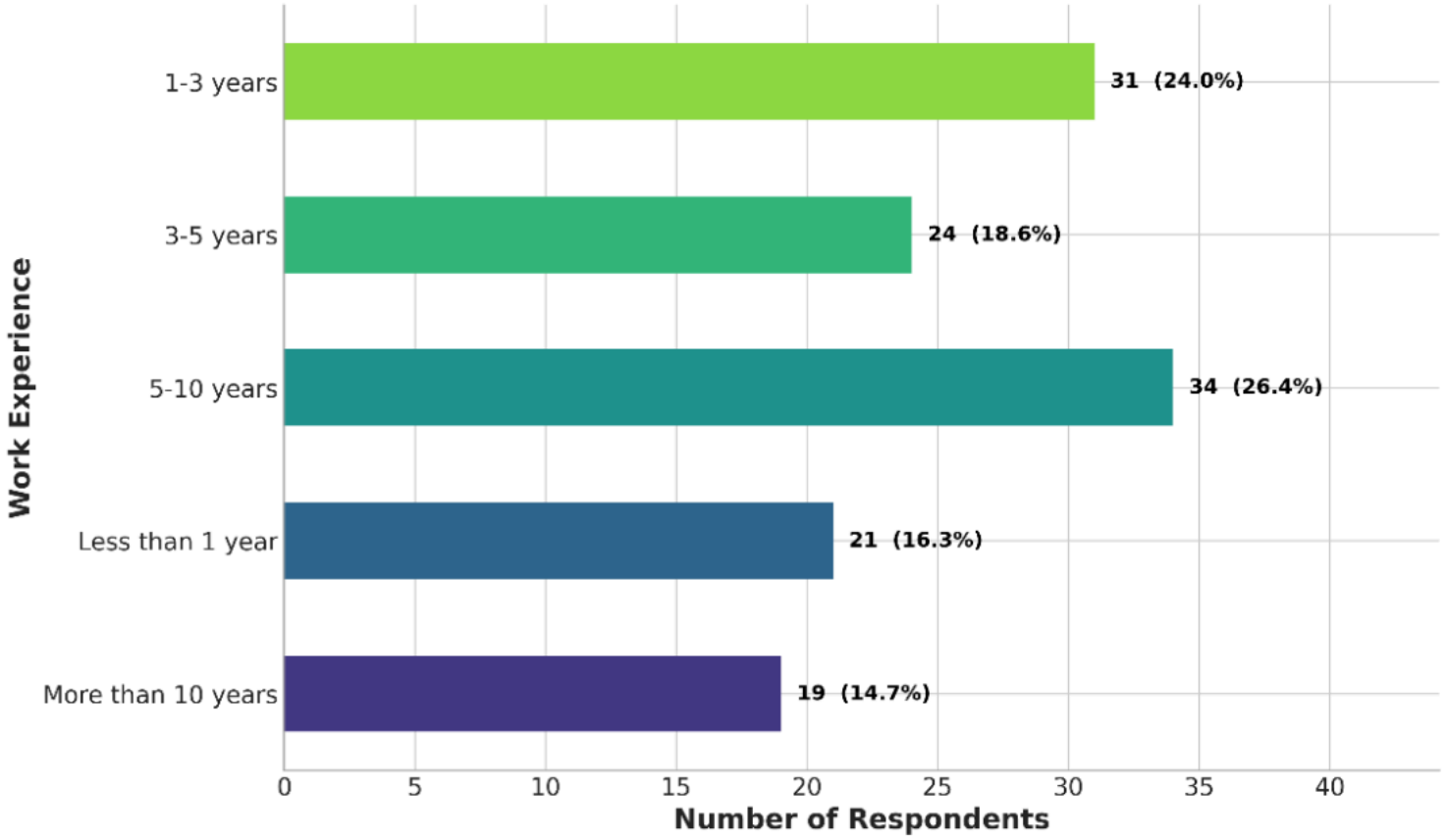


Figure 6

Distribution of respondents by work experience

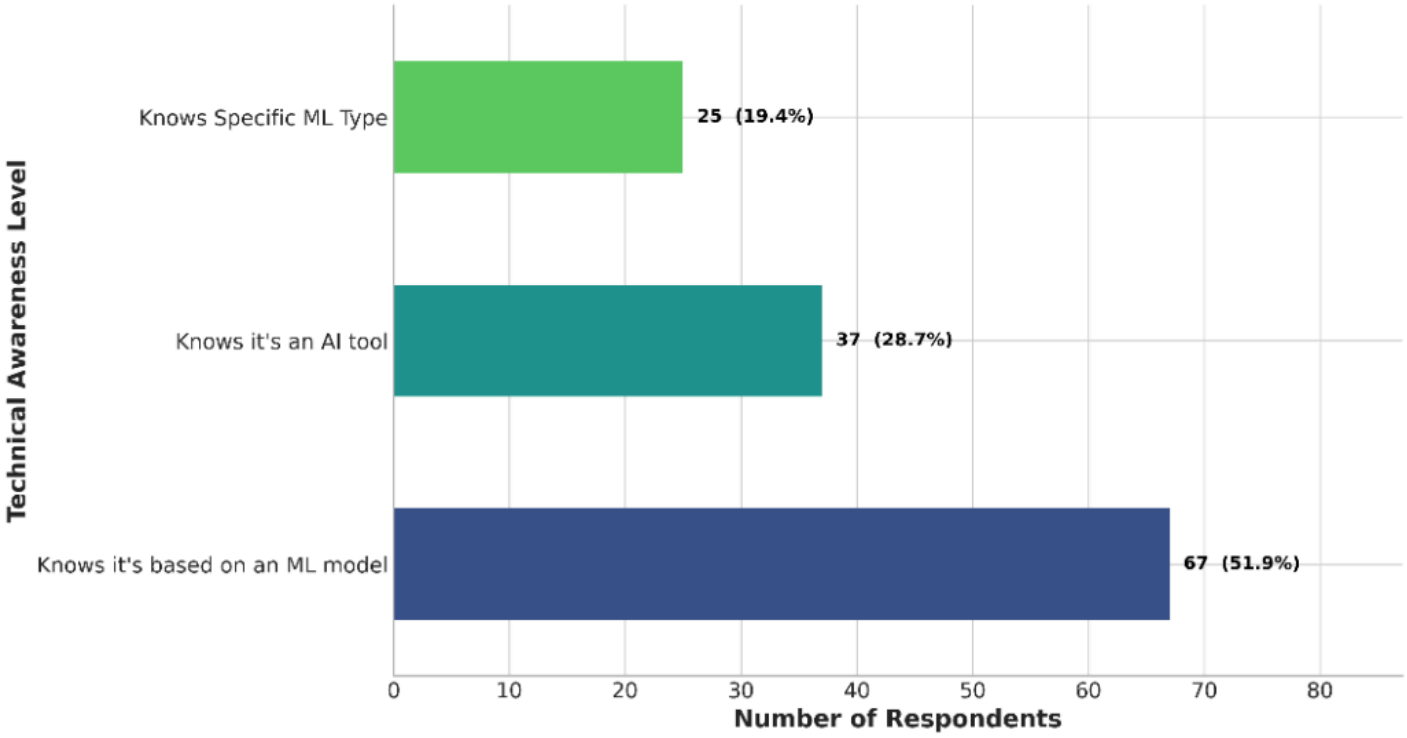


Figure 7

Distribution of respondents by technical awareness level

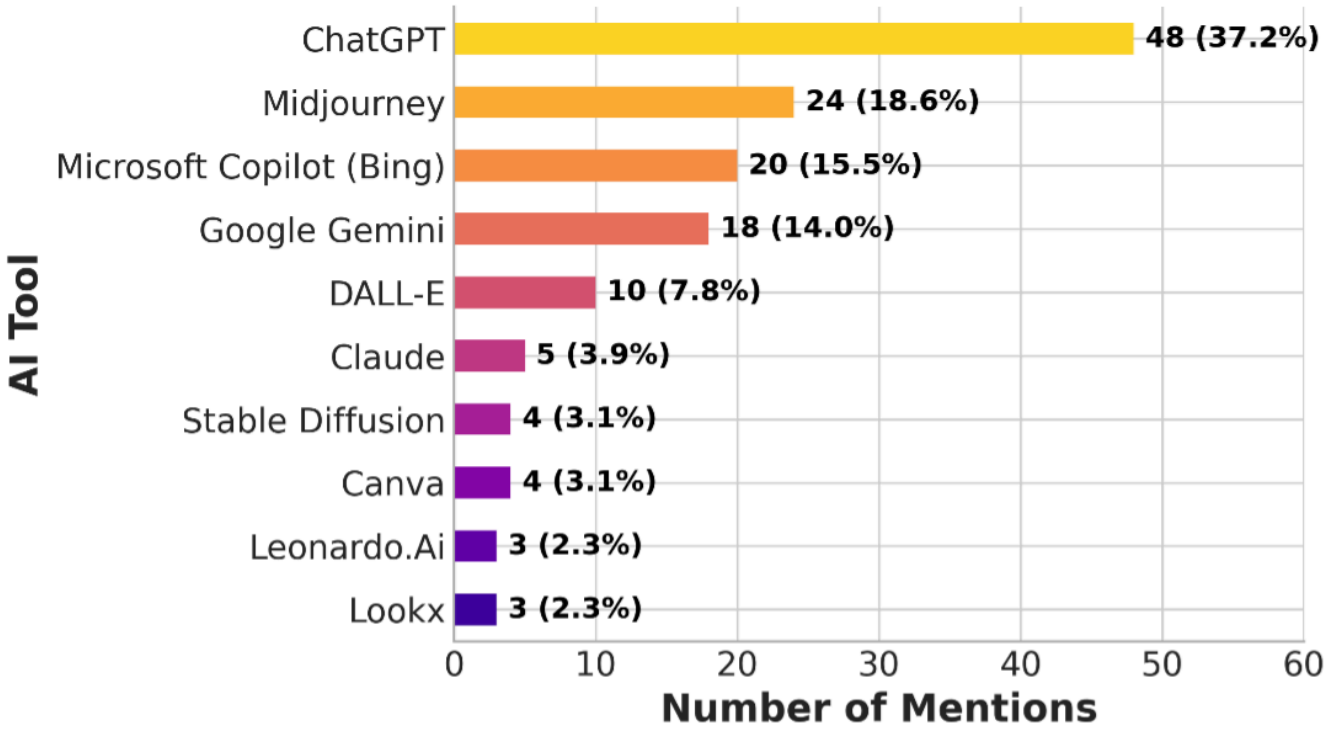


Figure 8

Most frequently mentioned AI tools