ABSTRACT

Artificial Intelligence (AI) is transforming the way music is created, distributed, and monetised worldwide. In Africa, research on this subject remains limited and is still in its early stages, rarely exploring the impact of AI on the activities of various actors in the music industry, including songwriting and recording, distribution, audience engagement, and rights management. Ghana's 2019 "Year of Return," which generated approximately US$1.9 billion for the economy, highlights both the potential of a thriving music tourism sector and ongoing challenges, including piracy, high broadband costs, and inadequate enforcement of intellectual property (IP) rights.

Given the nascent phase of research on artificial intelligence in the music industry, the current understanding tends to be vague and anecdotal, rather than theoretically grounded. First, there is still a need to clearly understand the factors that tend to drive interest in AI across the music actors' activities, as most evidence remains descriptive rather than theory-driven. Second, such an understanding will gain traction if it can leverage a motivational theory, such as the Motivation, Opportunity, and Ability (MOA) framework, which has been applied in information systems research but has yet to be applied in technology and music studies, making it particularly opportune for this endeavour. Third, existing research overlooks Africa-specific realities, including inconsistent digital infrastructure, weak enforcement of intellectual property rights, and debates over cultural authenticity, all of which can likely affect the adoption and effective use of any technology. Consequently, the influence of context in AI and music remains essentially unexplored.

To address these gaps, this study aimed to achieve four interconnected objectives. First, it explored the motivations (intrinsic and extrinsic) that lead music industry actors to adopt AI. Second, it examined the opportunities presented by AI across various music industry activities. Third, it assessed the abilities of music industry stakeholders to effectively leverage these opportunities. Fourth, it examined how stakeholders' perceptions of contextual conditions such as infrastructure, institutional frameworks, and cultural authenticity influence their adoption and effective use of AI. The study employed a qualitative, critical realist case-study approach, using sixteen stakeholder interviews to map the broader industry context, and three illustrative case studies of an artist, a producer, and a dance influencer, to gain in-depth insight, supplemented by documentary evidence.

The first research objective identified six motivational drivers shaping AI adoption: creative curiosity, fairness orientation, authenticity safeguard, operational efficiency, analytic insight, and audience reach expectancy. These drivers proved dynamic; enthusiasm rose during early experimentation and supportive interventions, dipped due to costs, quality issues, or regulations, and rebounded as skills or opportunities improved. This fluctuation produced diverse outcomes, ranging from the sustained and deep integration of AI tools into creative workflows to conditional use and accelerated production cycles, often boosting audience engagement.

The second research objective revealed three core AI-enabled opportunities for music industry actors: creative enhancement (generative composition, harmonisation, mastering), data-driven market reach (audience analytics, targeted promotion), and operational efficiency (task automation). Despite their potential, uneven infrastructure, high costs, and disparities in digital

literacy meant these opportunities were not equally accessible, making the benefits contingent upon broader technological and structural conditions.

The third research objective identified two essential ability sets for effective AI use: learning agility (self-directed experimentation and peer/online mentoring) and strategic-analytic capability (aligning AI insights with goals such as optimised release timing and niche-audience targeting). Persistent gaps, such as weak prompt-engineering skills, difficulty in interpreting AI outputs, and limited connectivity outside major urban areas, constrain uptake, underscoring the need for targeted upskilling and improved infrastructure. In addressing this objective, the study established an AI-tool classification that can guide industry actors and practitioners in selecting appropriate applications: assistive tools, which support communication, collaboration, and content management within existing workflows, and generative tools, which enable them to create entirely new and original outputs.

The fourth research objective examined the contextual factors that shape AI uptake. Stakeholders flagged three arenas: institutional, infrastructural, and cultural, but emphasised that their perceptions of these arenas, rather than the arenas themselves, determine adoption. Ambiguous copyright rules and the absence of creative-industry policy breed caution; patchy broadband and high data costs outside major urban centres discourage use; and fears of "diluting" highlife or hiplife coexist with hopes of enriching them. Actors who view these constraints as surmountable employ workarounds (VPNs, low-bandwidth presets, offshore partners), whereas those who see only threats hold back. Thus, adoption hinges on whether individuals frame constraints as barriers or opportunities.

These findings suggest that, although the effect of context appears to be uniform (applying equally to all actors), in some cases, it is the actors' perceptions of contextual threats from the weaknesses that determine the height or extent of their influence on AI adoption and subsequent value creation. In other words, context itself is not uniformly impactful; rather, the critical factor is whether actors perceive contextual conditions as threats, weaknesses, or opportunities. This perception shapes how actors innovatively leverage their opportunities and abilities, allowing them either to circumvent or effectively manage contextual challenges. Therefore, the study highlights the necessity of moving beyond a uniform view of context, towards understanding how individual perceptions decisively moderate the impact of context on AI adoption in the music industry.

This study advances knowledge on multiple levels. Empirically, it provides rare evidence on how artificial intelligence is being integrated into Africa's music sector, thereby addressing a persistent geographic gap in AI-music research. Theoretically, it extends the established Motivation, Opportunity, and Ability model by adding a perceptual Context dimension, resulting in the MOA-Cp framework that captures the structural, cultural, and institutional forces shaping technology adoption in African creative ecosystems. For Information Systems research, the findings connect platform affordances to user capabilities, sharpening context-sensitive technology adoption theory. Educationally, the project produced a fourteen-week "AI and Music" syllabus that combines conceptual foundations with practical modules in composition, production, distribution, marketing, education, and therapy. Practically, it facilitated the launch of *AIforMusic.org*, a community forum and curated repository of AI tools for Ghanaian practitioners. Policy recommendations from the study include subsidised fibre connectivity in creative districts, the integration of AI literacy into music curricula, and timely reform of copyright protections. Finally, these insights are disseminated across eight co-

authored chapters in the edited volume “AI and the Music Industry: Transforming Production, Platforms, and Practice” (2025), providing a methodology, case studies, thematic reviews, and a practical “AI and Music” syllabus to stakeholders across Africa.