Facing the Challenges of Film Production: From Economic Uncertainty to Digital Era Sustainable Practices

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Abstract

The film business has numerous significant difficulties among economic uncertainty and growing need for sustainable practices. Especially in the digital era, this research seeks to underline these problems and investigate creative ideas that might be used. Using literature research to examine several works on the difficulties and creative advances in film production, the hired approach is qualitative. The findings show that although encouraging sustainable practices, the acceptance of new technologies such artificial intelligence (AI) and virtual reality (VR) could satisfy changing audience needs and enhance manufacturing efficiency. Thus, cooperation among government agencies, local producers, distributors, and platform providers determines the future expansion and viability of the film industry.

Keywords: film industry; economic uncertainty; artificial intelligence (AI); virtual reality (VR); production innovation; audience preferences.

A. INTRODUCTION

The film industry is highly dynamic and faces numerous significant challenges for success and sustainability. This sector encounters various issues, ranging from economic uncertainty and shifts in distribution models to environmental concerns related to production materials. Nishijima and Pires' research in 2023 emphasizes market uncertainty and the necessity of developing new methods to evaluate a film's economic performance beyond box office revenue ¹. To foster stakeholder trust in this regard, transparency regarding production costs is crucial. As Martens explained, investors encounter problems with high production costs and the risk of financial losses, particularly in developing countries like Jamaica ².

The film industry cannot operate as an economic driver without the backing of government policies. Hadida emphasized how the rise of streaming services is challenging traditional distribution models, as film studios are asked to find a balance

¹ Marislei Nishijima and Ricardo Pires, "Revisiting Predictions of Movie Economic Success: Random Forest Applied to Profits," *Multimedia Tools and Applications*, 2023, 1–24, https://doi.org/10.1007/s11042-023-15169-4.

² Emiel Martens, "The Failing Promise of the Audio-Visual Industries for National Development: The History of Seventy Years of Film Policy in Jamaica, 1948–2018," *Creative Industries Journal*, 2023, 1–28, https://doi.org/10.1080/17510694.2023.2223379.

between mainstream and niche film production in response to increasingly diverse audience preferences ³.

In addition, sustainability issues are becoming increasingly important to address. Cabrera stated this in 2022, pointing to the difficulty of recycling production waste and the need for innovation in sustainable production practices ⁴. Although numerous studies have examined various issues related to film production, significant differences persist that require attention. First, not enough study has been done on how virtual reality and artificial intelligence, among other emerging technology, might be included into environmentally friendly manufacturing techniques.

This implicitly highlights the gap between the current state of the industry and its potential (das Sollen). Second, there is limited research on innovative business models that can attract investment in emerging markets, particularly in countries facing profitability and distribution challenges. Third, the connection between audience desires and the production innovations needed to adapt to the digital age remains unclear. The findings of this study are more recent, arising from efforts to address these gaps through a systematic approach. This will enable the film industry to adjust to rapid digital changes. This most recent research seeks to provide creative ideas for sustainability and economic success as well as improve knowledge of the difficulties facing the film business. This study aims to identify and examine the challenges the film sector faces in implementing sustainable practices and navigating economic uncertainties, as well as to explore creative ideas that can be applied, particularly in underdeveloped nations. Consequently, this study should help to improve film policy and offer relevant guidance for digital era film production techniques.

The film industry is a significant branch of art and an important economic sector. To understand the dynamics and challenges facing this sector, industrial economic theory can be applied. Creative Economy Theory posits that innovation and creativity

³ Allègre L Hadida et al., "Hollywood Studio Filmmaking in the Age of Netflix: A Tale of Two Institutional Logics," *Journal of Cultural Economics* 45, no. 2 (2021): 213–38, https://doi.org/10.1007/S10824-020-09379-Z.

⁴ G Cabrera et al., "A Journey from Processing to Recycling of Multilayer Waste Films: A Review of Main Challenges and Prospects," *Polymers* 14, no. 12 (2022): 2319, https://doi.org/10.3390/polym14122319.

can generate economic value, making it a relevant theory. According to research by Howkins (2001), the creative industry serves as an economic driver that must adapt to changes, including shifts in technology, markets, and audience preferences. Additionally, understanding risk management theory is crucial for film producers when making strategic decisions in an unpredictable economic environment.

Knight (1921) claimed that uncertainty poses difficult to measure hazards that call for creative solutions to minimize possible losses. In this regard, using fresh technology like artificial intelligence and big data analytics can improve marketing and distribution decisions in movies. Finally, the Triple Bottom Line (TBL) Theory emphasizes that every business must consider economic, social, and environmental aspects. In the film industry, sustainability refers to the ecological impact of the film production process, as well as the social responsibility of film companies to the community and their long-term financial benefits (Elkington, 1997). Therefore, this research aims to explore how these theories can be utilized to address the problems facing the film industry today.

Although numerous studies have addressed this topic, there remains room for further research in film production. Some other issues, including the primary obstacles the film business faces from economic uncertainties and digital era distribution model changes, have no perfect solutions. How may the implementation of modern technologies including virtual reality and artificial intelligence assist to solve problems and support environmentally friendly manufacturing methods? Particularly in nations experiencing profitability and distribution problems, what innovative business models can draw investment to the developing film market? The researcher wants to better grasp the possibilities, strengths, and shortcomings of the modern film business and offer strategic recommendations for players in the production sector. They also want to look at how streaming age audience tastes have affected creativity in film creation and how this has affected business sustainability.

B. RESEARCH METHODS

Based on the design of the literature study, this research employs a qualitative approach. The purpose of this study is to explore and analyze various perspectives related to challenges and practices in film production, particularly those concerning sustainability, economic uncertainty, and changes in distribution models. This research will also adopt an analytical descriptive approach. The design involves several steps. First, it is essential to identify the sources of literature. You should then look for and choose pertinent material, including books, journal entries, and most recent studies on the film business, economic instability, technology developments, and environmental impact of film manufacture. The relevancy of the topic, the year of publication—ideally within the last five to ten years the impact in the field of research, and the publisher's reputation all help to determine which sources to use. Apart from gathering information, the literature is divided into particular domains like technological developments, sustainable practices, and problems in film production. Furthermore, to organize and store relevant library resources, utilize a reference management tool like Mendeley. Moreover, data analysis involves examining the collected literature to identify themes, patterns, and relationships between relevant factors in the problem areas facing the film industry. Additionally, qualitative analysis techniques such as "theme analysis" are used to define new themes, and "coding" is employed to classify data based on predefined key categories. Finally, create a report on the research findings using data analysis to elucidate sustainability issues and practices. Ensure that the report is well-written, utilizes appropriate academic language, and adheres to the writing guidelines of recognized international journals.

C. DISCUSSION RESULTS

1. Major Challenges in Film Production

A complicated process with numerous management, creative, and technological aspects is film production. Filmmakers deal with several important problems behind the scenes that could influence the result of a film. These difficulties fall under areas including environmental problems, economic uncertainties, and shifting distribution of

resources. As Nishijima & Pires explained in 2023, economic uncertainty may impact the reputation and profitability of the film industry ⁵.

Many film studios still rely on traditional methods that rely on box office revenue, but this approach is no longer enough to measure the success of a film in a changing market. Changes in film distribution models, according to Hadida. Audiences have changed the way they access movie content due to streaming services that now dominate the market ⁶. To meet the desires of various audience segments, studios must balance large mainstream film productions and smaller niche films.

In "The Challenges of Marketing in the 4.0 Era," Boccardelli discovered and analyzed the application of the marketing mix concept as a film marketing strategy in the 4.0 era. The interaction between the viewer and the film profile (producing studio) changes with this age of marketing. Using developments in communication and information technology, the manufacturing sector may produce premium goods, cut manufacturing costs, and maximize distribution networks⁷.

In film production, another major issue is the limitation of human resources (HR) and their capabilities. The production process and the quality of films can be disrupted due to a shortage of directors, producers, and technical staff. The limitations of film schools in Indonesia contribute to a deficiency of skilled film workers⁸. Financing and Budget Problems. Often, the primary challenge in film production is cost. Limited funds can restrict innovation and technical capabilities, and even interrupt production continuity. Changes in filming schedules, overtime, or other unexpected expenses frequently lead to increased costs. ⁹. Poor scheduling can result in delays and increased

⁵ Nishijima and Pires, "Revisiting Predictions of Movie Economic Success: Random Forest Applied to Profits."

⁶ Hadida et al., "Hollywood Studio Filmmaking in the Age of Netflix: A Tale of Two Institutional Logics."

⁷ Didy Ika Supryadi and Luluk Fadliyanti, "Dari Tradisional Ke Digital: Pemasaran Film Dan Tantangan Konsumsi," *Journal of Economics and Business* 6, no. 2 (2020): 58–66, https://doi.org/10.29303/ekonobis.v6i2.47.

⁸ Robin J D B Moran, "Tantangan Pasca Produksi Film" 16, no. 4 (2016): 450–57, https://indonesia.sae.edu/wp-content/uploads/2020/11/Tantangan-Pasca-Produksi-Film.pdf.

⁹ Moran; Kompasiana, "Tantangan Dalam Memproduksi Film Dokumenter Independen Konten Ini Telah Tayang Di Kompasiana.Com Dengan Judul 'Tantangan Dalam Memproduksi Film Dokumenter Independen', Klik Untuk Baca:

Https://Www.Kompasiana.Com/Hendrajawanai/6558da0dedff7641334bcc83/Tant," Kompasiana.com,

production costs. To ensure that the entire film production process operates smoothly, thorough calculations and meticulous planning are necessary ¹⁰. Access to the resources needed for production is crucial. For independent films, securing high-quality equipment, filming locations, and licenses often presents challenges. Filmmakers must discover innovative ways to film, such as utilizing incomplete equipment or obtaining free permits to shoot in public areas. ¹¹.

Social Environment. The surrounding community sometimes resists filming in certain locations. Another social barrier can arise from a lack of communication between the production team and the residents. Site managers are tasked with building strong relationships with the local community ¹². Industry Competition and Economic Gap: The film industry is facing increasingly fierce competition from both local filmmakers and foreign blockbusters. Economic disparities among industry players also complicate funding and distribution efforts for independent filmmakers, making it difficult for them to match major studios. ¹³

Business Model Fluctuations and Technology Adaptation. The COVID-19 pandemic and digitalization have transformed business models. The adoption of new technologies such as AI, AR, and VR offers both opportunities and challenges that not all industry players are prepared to leverage ¹⁴. Piracy and Copyright Protection. Many movies are pirated through illegal streaming sites, resulting in substantial revenue losses for filmmakers and studios. In the digital age, the challenge of protecting copyright persists ¹⁵. Reputation and Privacy Management. Stakeholders in the film industry urgently need

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^{2023,} https://www.kompasiana.com/hendrajawanai/6558 da 0 ded ff 7641334 bcc 83/tantangan-dalam-memproduksi-film-dokumenter-independen.

¹⁰ Moran, "Tantangan Pasca Produksi Film"; Kompasiana, "Tantangan Dalam Memproduksi Film Dokumenter Independen Konten Ini Telah Tayang Di Kompasiana.Com Dengan Judul 'Tantangan Dalam Memproduksi Film Dokumenter Independen', Klik Untuk Baca:

Https://Www.Kompasiana.Com/Hendrajawanai/6558da0dedff7641334bcc83/Tant."

¹¹ Kompasiana, "Tantangan Dalam Memproduksi Film Dokumenter Independen Konten Ini Telah Tayang Di Kompasiana.Com Dengan Judul 'Tantangan Dalam Memproduksi Film Dokumenter Independen', Klik Untuk Baca: Https://Www.Kompasiana.Com/Hendrajawanai/6558da0dedff7641334bcc83/Tant."

¹² Moran, "Tantangan Pasca Produksi Film."

¹³ (IKJ, 2024).

¹⁴ IKJ; Biznet, "Tantangan Dan Peluang Industri Film Di Era Revolusi Industri," biznetnetworks.com, 2024.

¹⁵ Biznet, "Tantangan Dan Peluang Industri Film Di Era Revolusi Industri."

reputation management and data security when interacting with audiences on social media, as it enables marketing but also poses privacy risks, controversies, and cyberattacks. ¹⁶

Table of Major Challenges in Film Production Based on Several Studies

Challenge	Description
HR and Competencies	Limited film experts and education
Financing and Budgeting	Limited funds, cost overruns
Production Scheduling and	Schedule changes, debt scenes, immature planning
Management	
Access Resources	Difficulty in accessing tools, locations, and permits
Social Resistance	Residents' refusal, filming location communication
Competition and Economic	Tight competition, access, and funding gaps
Disparities	
Technology Adaptation	Investment in new tools, expertise, and business
	model change
Piracy	Loss of income due to illegal distribution
Privacy and Reputation	Risk of controversy, cyberattacks, public image
	management

Source: Previous research

Film industry players must stay creative, diligent, and adaptable to produce relevant, competitive, and high-quality products amid these challenges.

2. Application of New Technologies

The film industry can leverage new technologies, such as artificial intelligence (AI) and virtual reality (VR), to enhance sustainable production practices and address uncertainty. Among its several difficulties are changing audience tastes, market volatility, and sustainable and efficient production requirements. The integration of innovative technologies into the film industry is creating new possibilities in manufacturing and distribution as well as creative answers to these challenges. Audience data analysis and decision-making benefit much from artificial intelligence.

¹⁶ IKJ, "Peluang & Tantangan Industri Film Dan Televisi Abad Ke-21"; Biznet, "Tantangan Dan Peluang Industri Film Di Era Revolusi Industri."

AI can effectively analyze audience data to grasp preferences and behaviors. The insights gained from this analysis are essential to the decision-making process, influencing everything from content development to distribution strategy. By considering market trends and audience consumption patterns, producers can make more informed and strategic decisions ¹⁷. AI enhances the creative process for writers by providing fresh inspiration, identifying effective story patterns, and even generating dialogue 18. Additionally, AI is utilized to organize the schedules of actors and crews, optimize logistics, and more accurately estimate production durations and costs. This enables production to run more resource-efficiently and effectively. 19. How VR Affects Viewer Experience and Production Practices\nWith VR technology, audiences can enjoy a more engaging and interactive experience, feeling as if they are part of the story rather than just passive viewers 20. Viewers can explore the storyline, interact with the characters, and even influence the storyline through their own decisions 21. In addition, virtual reality (VR) is used in film production to create realistic virtual environments. This makes it easy to predict scenes and allows for the creation of complex or high-risk scenes in the real world ²². This increases production sustainability and reduces the need for physical resources.

Opportunities for film marketing and distribution. Virtual reality opens up new possibilities for film marketing and distribution. Virtual reality-based campaigns can increase audience emotional engagement and expand the reach of promotions, even allowing viewers to try a movie virtually before watching it in full. ²³. Effects on

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¹⁷ Chairil Anwar, "Analisis Potensi Masa Depan AI Pada Industri Film," *JISCO : Journal of Information System and Computing* 2, no. 1 (2025): 17–26,

https://jurnal.fst.uinjambi.ac.id/index.php/jisco/article/view/99; Pabila Syaftahan, "Peranan AI Dalam Film Dan Animasi," aihub.id, 2024, https://aihub.id/pengetahuan-dasar/peranan-ai-dalam-film.

¹⁸ Anwar, "Analisis Potensi Masa Depan AI Pada Industri Film"; Admin, "Penerapan AI Dalam Industri Film," iptek.co.id, 2023, https://iptek.co.id/penerapan-ai-dalam-industri-film/.

¹⁹ Syaftahan, "Peranan AI Dalam Film Dan Animasi."

²⁰ Bpmp, "Teknologi Realitas Virtual: Menyulap Penonton Menjadi Bagian Dari Film," bpmpp.uma.ac.id, 2024, https://bpmpp.uma.ac.id/2024/12/19/teknologi-realitas-virtual-menyulap-penonton-menjadi-bagian-dari-film/; Antaranews, "Sineas Ungkap Tantangan Pembuatan Film," idseducation.com, 2022.

²¹ Syaftahan, "Peranan AI Dalam Film Dan Animasi"; Bpmp, "Teknologi Realitas Virtual: Menyulap Penonton Menjadi Bagian Dari Film."

²² Antaranews, "Sineas Ungkap Tantangan Pembuatan Film"; Maulana Yusuf, "5 Teknologi Dalam Pembuatan Film Yang Bikin Pecah," digiyok.com, 2025.

²³ Yusuf, "5 Teknologi Dalam Pembuatan Film Yang Bikin Pecah."

Economic Stability and Sustainability. By reducing costs and increasing revenue opportunities through new distribution models, the integration of VR and AI can enhance production efficiency, minimize resource waste, and expedite creative and distribution processes. ²⁴

Additionally, the new experiences provided by virtual reality (VR) enhance viewer loyalty to films, create new market opportunities, and add value for audiences. Ethical Challenges and Considerations: While virtual reality technology has many advantages, several issues warrant attention. These include the still high cost of developing virtual devices and ethical concerns surrounding the use of AI, such as exploiting the voices and images of deceased actors. ²⁵

Additionally, concerns have been raised about the impact of AI on employment in the film industry. Today, AI is viewed more as a complementary tool to human creativity rather than a replacement for. ²⁶. Some evidence of the uses of artificial intelligence and virtual reality (AR) in the film industry can help overcome uncertainty, improve production efficiency, and enhance the audience experience. This technology not only encourages more sustainable production practices but also fosters innovation in marketing and distribution. Thus, it will contribute to economic stability and a more creative and adaptive future for the film industry. (Anwar, 2025; Bpmp, 2024; Syaftahan, 2024).

3. Innovative Business Models for Emerging Markets

Limited research has been done on the development of creative business models in smaller film markets like Jamaica. Martens noted that the growth of the country's film industry continues to be hampered by investment challenges, despite the government's supportive policies. ²⁷ Partnerships between local studios and global streaming

²⁴ Syaftahan, "Peranan AI Dalam Film Dan Animasi"; Anwar, "Analisis Potensi Masa Depan AI Pada Industri Film"; Bpmp, "Teknologi Realitas Virtual: Menyulap Penonton Menjadi Bagian Dari Film."
 ²⁵ Anwar, "Analisis Potensi Masa Depan AI Pada Industri Film"; Syaftahan, "Peranan AI Dalam Film Dan Animasi."

²⁶ Anwar, "Analisis Potensi Masa Depan AI Pada Industri Film"; Admin, "Penerapan AI Dalam Industri Film"

²⁷ Martens, "The Failing Promise of the Audio-Visual Industries for National Development: The History of Seventy Years of Film Policy in Jamaica, 1948–2018."

platforms can attract more investment. Additionally, the uniqueness of local culture and creativity can be leveraged to create content that resonates with a global audience. Although the government has made efforts to support Jamaica's film industry, limited investment poses a major issue. Martens highlighted that Jamaica's film industry, which relies on other sectors like tourism, has not been fully explored and monetized, as policy support alone has not sufficed in addressing the investment challenges that hinder the industry's growth.

A special fund worth 1 billion Jamaican dollars, the Jamaica Screen Development Initiative (JSDI), was recently launched by the Jamaican government to support local film, TV series, and animation production. Managed by JAMPRO, this program represents the government's first significant step in providing direct financial assistance to local filmmakers. It is hoped that this initiative will improve the national film industry, boost investor confidence, and create more job and training opportunities for local talent.

Developing a creative business model through strategic collaborations between local studios and global streaming platforms is a proposed solution. Access to international markets: Jamaican film content can reach global audiences through Over-the-Top (OTT) platforms like Netflix or Amazon Prime, thereby boosting international revenue and visibility. Foreign investment is appealing. With the involvement of global platforms, local cinema can attract new investment in the form of production and distribution funding ²⁸. Transferring knowledge and technology. Collaborating with global partners creates opportunities for technology transfer, training, and the adoption of international production standards. In Indonesia, a similar situation has occurred, where collaborations between local studios and OTT platforms have improved independent film distribution and increased local filmmakers' income. ²⁹.

To attract international audiences, film content can draw from Jamaica's rich local culture and creativity, including historical narratives, Rastafarian lifestyle, and reggae

²⁸ Faradiba Sabina Erdian, "Strategi Pengembangan Bisnis Indutri Kreatif Skala Kecil Melalui Pendekatan Business Model Canvas (Studi Kasus Pada Platform Ott Sineasmov)," *Jurnal Lentera Bisnis* 13, no. 1 (2024): 438, https://doi.org/10.34127/jrlab.v13i1.1033.

²⁹ Erdian.

music. Documentaries such as "Marley" have successfully represented Jamaican culture and inspired communities worldwide, demonstrating that local content has broad appeal. ³⁰. Due to international film investments, such as the production of "Bob Marley: One Love" by Paramount Pictures, new jobs have been created and foreign exchange generated for the country. Additionally, the government acknowledges the importance of cultural representation in films to foster national identity and enhance public pride. To address investment challenges and broaden the market, Jamaica's film industry needs an innovative business model. Supported by government policies and the use of local cultural resources, partnerships between local studios and global streaming platforms can act as a catalyst for the growth of Jamaica's film industry. This initiative not only strengthens Jamaica's cultural identity and competitiveness on the global stage but also enhances the country's economic potential.

4. Audience Preferences and Production Innovation

Developing creative approaches of making movies depends critically on the always shifting tastes of viewers, particularly in the digital era. Research indicates that viewers of today are increasingly interested in unique and varied content—often lacking in mainstream movies. Meeting the varied demands of these viewers depends on creative productions. More study is required to understand how audience comments could inspire creativity in film production and enhance an interesting viewing experience. In cinema production, innovation is essential since it covers not just technology but also cultural representations, audience interactions, and narrative telling techniques. For instance, a more immersive viewing experience can be produced in movies by using digital technologies such virtual reality, augmented reality, and interactivity. A more honest approach to narrative and a wide spectrum of character representations will help to fairly depict difficult social reality. Methodologies of flexible and cooperative production should include audience involvement during the creative process. Appreciating how audience comments can inspire Development of creative approaches

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 $^{^{30}}$ Base Fish, "No 主観的健康感を中心とした在宅高齢者における 健康関連指標に関する共分散構造分析Title" 2507, no. February (2020): 1–9.

of filmmaking depends on the often shifting tastes of viewers, especially in the digital era. Studies reveal that viewers of today are increasingly drawn to unique and varied content often lacking in mainstream films. To satisfy the demands of these different audiences, creative works are absolutely important. More research is required to grasp how audience comments could inspire creativity in film production and result in an interesting viewing experience. In cinema production, innovation is essential since it encompasses storytelling, cultural representations, and audience interactions going beyond technology. Including digital technologies like virtual reality, augmented reality, and interactive aspects in movies, for example, might make the viewing more immersive. A spectrum of character portrayals and an open attitude to narrative can reflect complicated social reality. Methodologies of flexible and cooperative production should involve audience involvement during the creative process. One crucial component that calls more research is realizing how audience comments might inspire production innovation. By using real-time audience data and insights, producers and directors may learn about market needs, create more relevant and interesting content, and change with the times and preferences, therefore reducing the chance of commercial failure. In digital age film production depends on innovation depending on knowledge of and response to audience dynamic preferences. A more real and varied watching experience can result from well combined audience comments. Therefore, focused research in this field is vital for establishing a more adaptive and innovative film business since the always changing audience preferences in the digital age demand responsive innovation in film production. Effective integration of audience comments can help the film business create more real, varied, and fulfilling works as well as improve the whole watching experience. Using real-time audience data and insights, directors can better understand market needs, provide more relevant and interesting material, and change with the times and tastes, so lowering the chance of commercial failure. In digital age film production depends on innovation depending on knowledge of and response to audience dynamic preferences. A more real and varied watching experience can result from well combined audience comments. Therefore, targeted research on this issue is crucial to produce a more adaptive and innovative film industry since the always shifting audience preferences in the digital age demand responsive innovation in film production. Effective integration of audience comments will help the film sector produce more real, varied, and fulfilling works as well as enhance the whole viewing experience.

D. CONCLUSIONS and RECOMENDATIONS

The film business is confronting numerous important difficulties right now. These cover changes in distribution patterns, economic uncertainties, and the need of using sustainable practices in the digital era. As the business develops, changes in audience tastes and technology developments such artificial intelligence (AI) and virtual reality (VR) offer both fresh possibilities and problems for the film production and distribution process. The research draws attention to certain important problems. First of all, market instability calls for a fresh perspective on the larger economic influence of films in relation to conventional box office income. Second, the move toward streaming services challenges movie companies' capacity to change to meet different audience tastes. Third, sustainability issues especially with relation to production waste management are growingly important and call for the acceptance of fresh approaches. Attracting investment also depends on strategic alliances and creative business models, particularly in underdeveloped nations like Jamaica where investment concerns continue to be a major deterrent. By leveraging the rich local culture and enhancing distribution via international venues, the film business has great room for expansion. Using fresh technologies like VR and artificial intelligence can help to increase audience viewing experience and boost manufacturing efficiency. To thus boost the film industry ecosystem in the future, practitioners and legislators should mostly advise stronger cooperation among governments, local producers, and distribution platform providers. Furthermore, this study will enable more studies targeted at finding creative and practical answers to improve the financial performance and environmental viability of the movie business.

DAFTAR PUSTAKA

- Admin. "Penerapan AI Dalam Industri Film." iptek.co.id, 2023. https://iptek.co.id/penerapan-ai-dalam-industri-film/.
- Antaranews. "Sineas Ungkap Tantangan Pembuatan Film." idseducation.com, 2022.
- Anwar, Chairil. "Analisis Potensi Masa Depan AI Pada Industri Film." JISCO: Journal of Information System and Computing 2, no. 1 (2025): 17–26. https://jurnal.fst.uinjambi.ac.id/index.php/jisco/article/view/99.
- Biznet. "Tantangan Dan Peluang Industri Film Di Era Revolusi Industri." biznetnetworks.com, 2024.
- Bpmp. "Teknologi Realitas Virtual: Menyulap Penonton Menjadi Bagian Dari Film." bpmpp.uma.ac.id, 2024. https://bpmpp.uma.ac.id/2024/12/19/teknologi-realitas-virtual-menyulap-penonton-menjadi-bagian-dari-film/.
- Cabrera, G, Jixiang Li, Abderrahim Maazouz, and Khalid Lamnawar. "A Journey from Processing to Recycling of Multilayer Waste Films: A Review of Main Challenges and Prospects." Polymers 14, no. 12 (2022): 2319. https://doi.org/10.3390/polym14122319.
- Didy Ika Supryadi, and Luluk Fadliyanti. "Dari Tradisional Ke Digital: Pemasaran Film Dan Tantangan Konsumsi." Journal of Economics and Business 6, no. 2 (2020): 58–66. https://doi.org/10.29303/ekonobis.v6i2.47.
- Erdian, Faradiba Sabina. "Strategi Pengembangan Bisnis Indutri Kreatif Skala Kecil Melalui Pendekatan Business Model Canvas (Studi Kasus Pada Platform Ott Sineasmov)." Jurnal Lentera Bisnis 13, no. 1 (2024): 438. https://doi.org/10.34127/jrlab.v13i1.1033.
- Fish, Base. "No 主観的健康感を中心とした在宅高齢者における 健康関連指標に関する 共分散構造分析Title" 2507, no. February (2020): 1–9.
- Hadida, Allègre L, Joseph Lampel, W David Walls, and Amit Joshi. "Hollywood Studio Filmmaking in the Age of Netflix: A Tale of Two Institutional Logics." Journal of

- Cultural Economics 45, no. 2 (2021): 213–38. https://doi.org/10.1007/S10824-020-09379-Z.
- IKJ. "Peluang & Tantangan Industri Film Dan Televisi Abad Ke-21." fftv.ikj.ac.id, 2024. https://fftv.ikj.ac.id/peluang-dan-tantangan-industri-film-dan-televisi-di-abad-ke-21/.
- Kompasiana. "Tantangan Dalam Memproduksi Film Dokumenter Independen Konten Ini Telah Tayang Di Kompasiana.Com Dengan Judul 'Tantangan Dalam Memproduksi Film Dokumenter Independen', Klik Untuk Baca: Https://Www.Kompasiana.Com/Hendrajawanai/6558da0dedff7641334bcc83/Tant.

 "Kompasiana.com, 2023. https://www.kompasiana.com/hendrajawanai/6558da0dedff7641334bcc83/tantang an-dalam-memproduksi-film-dokumenter-independen.
- Martens, Emiel. "The Failing Promise of the Audio-Visual Industries for National Development: The History of Seventy Years of Film Policy in Jamaica, 1948–2018."

 Creative Industries Journal, 2023, 1–28. https://doi.org/10.1080/17510694.2023.2223379.
- Moran, Robin J D B. "Tantangan Pasca Produksi Film" 16, no. 4 (2016): 450–57. https://indonesia.sae.edu/wp-content/uploads/2020/11/Tantangan-Pasca-Produksi-Film.pdf.
- Nishijima, Marislei, and Ricardo Pires. "Revisiting Predictions of Movie Economic Success: Random Forest Applied to Profits." Multimedia Tools and Applications, 2023, 1–24. https://doi.org/10.1007/s11042-023-15169-4.
- Syaftahan, Pabila. "Peranan AI Dalam Film Dan Animasi." aihub.id, 2024. https://aihub.id/pengetahuan-dasar/peranan-ai-dalam-film.
- Yusuf, Maulana. "5 Teknologi Dalam Pembuatan Film Yang Bikin Pecah." digiyok.com, 2025.