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EXPLORING AI-GENERATED VISUAL THEMES IN ASIAN ART AS A FOUNDATION FOR ADVANCING DIGITAL ART RESEARCH

DEVI YURISCA BERNANDA[1], FILSCHA NURPRIHATIN[2], JOHANES FERNANDES ANDRY[3], FRANCKA SAKTI LEE[4], ANGIE WIYANI PUTRI[5], RION COMERON[6]

[1]Department of Digital Business, Faculty of Social Sciences and Humanities, Indonesia
[2]Department of Industrial Engineering, Sampoerna University, Indonesia
[3,4,5,6]Information Systems, Bunda Mulia University, Faculty of Technology and Design, Indonesia

E-mail: [1]dbernanda@bundamulia.ac.id, [2]filscha.nurprihatin@sampoernauniversity.ac.id, [3]jandry@bundamulia.ac.id, [4]flee@bundamulia.ac.id, [5]angiewiyani21@gmail.com, [6]rcomeron9@gmail.com

ABSTRACT

This study aims to analyze emerging trends, and visual themes present in AI generated artworks across Asia by employing Descriptive, Predictive, and Prescriptive Analytics using the Tableau platform. The dataset utilized in this research comprises 10,000 AI generated image entries, focusing specifically on attributes such as digital art genre, production time, and Asian regional context. Through comprehensive analytical stages, the study examines how AI models construct visual styles, reinterpret artistic traditions, and synthesize cultural elements within the broader landscape of contemporary digital art. The primary challenge addressed in this research concerns the difficulty of identifying promising digital art genres for further exploration. This complexity arises from the increasingly diverse stylistic variations, the continuous evolution of visual themes, and the limitations in categorizing AI generated artworks that blend multiple genres or introduce novel styles that lack clear definition. To address these challenges, the methodological framework consists of four major stages: data acquisition and preprocessing using publicly available datasets, feature extraction and exploratory data analysis to uncover meaningful patterns and genre distributions, predictive and prescriptive analytics to determine potential genre trajectories and provide actionable recommendations and validation and interpretation to ensure analytical robustness and contextual relevance. The findings highlight the importance of sustained thematic innovation, deeper exploration of visual styles, and deliberate integration of localized cultural motifs to ensure that AI generated art remains relevant, competitive, and culturally grounded within Asian markets. Furthermore, strategic recommendations are formulated for each identified genre category to enhance artistic quality and strengthen the market positioning of AI generated digital artworks. This research is expected to contribute significantly to the advancement of AI driven artistic production in Asia by offering insights that are technical, aesthetic, and cultural in nature, ultimately supporting the development of more informed, sustainable, and contextually responsive digital art practices.

Keywords: *Artificial Intelligence, Digital Art, Dataset, Predictive Analytics, Art Genres*

1. INTRODUCTION

Technological advancement has undergone rapid and continuous evolution, reshaping and transforming various industrial sectors [1]. These developments have produced significant impacts and have given rise to new forms of innovation across multiple domains [2]. One of the most prominent and rapidly advancing innovations is artificial intelligence (AI), which has demonstrated substantial progress and widespread application, particularly in creative and digital industries [3]. Among these applications, AI-based image generation technologies have gained considerable attention, enabling users to produce high-quality images through keyword-based prompts and automated image processing techniques [4], [5].

Current AI-driven photo processing techniques enable the production of high-quality digital images through simple keyword commands, provided that the input specifications align with the system's requirements [6]. AI image generation employs computational algorithms capable of mimicking artistic styles or even producing entirely new stylistic forms [7]. Despite these advantages,

numerous challenges accompany the rapid growth of AI technologies, including concerns about job displacement across various industries [8]. Additional issues arise related to ethics, such as unauthorized reuse of code and licenses, sustainability concerns, algorithmic bias, user inexperience, security risks, and excessive dependence on AI systems that may reinforce behaviors hindering independent learning and skill development [9].

AI technologies, particularly those used in image generation and processing, present complex challenges due to the sophistication of the underlying algorithms [10]. These algorithms are often difficult to analyze in depth, especially when associated with evolving styles, themes, and trends in digital art [11]. A critical issue that remains insufficiently addressed is the lack of systematic frameworks for identifying and classifying AI generated artistic genres, particularly within Asian cultural and artistic contexts. The continuous emergence of hybrid styles, evolving aesthetic trends, and culturally ambiguous visual forms presents significant difficulties in establishing clear genre classifications [12], [13]. This gap hinders scholarly analysis, cultural preservation, and the ethical deployment of AI generated art in regional creative industries. Therefore, the primary objective of this study is to examine the challenges of categorizing AI generated art and to explore potential approaches for identifying and defining artistic genres within the Asian context. The significance of this study lies in its potential to advance academic discourse on AI and digital art, support ethical and culturally sensitive AI deployment, and provide a foundation for future research in creative AI systems. Furthermore, the findings may assist artists, researchers, and policymakers in understanding the implications of AI generated art and in developing guidelines that promote both technological innovation and cultural diversity [14].

2. THEORY

2.1 AI Generated Images

Recent advancements in AI driven image generation algorithms have enabled artificial intelligence systems to produce a wide range of visual styles, including outputs that closely resemble real photographic images [15]. AI Image Generators, as a form of artificial intelligence technology used to create digital artwork, have gained substantial popularity in recent years due to their practicality and ease of use for generating digital image compositions [16]. With the emergence of increasingly sophisticated AI technologies, the process of image creation has undergone profound transformation, prompting debates regarding the shifting notions of authorship, creativity, and the documentary value of images [17].

AI image generators empower users to materialize imaginative and complex visual concepts into stunning digital representations, often producing details that surpass human expectations. A major breakthrough in this field is the introduction of Generative Adversarial Networks (GANs), first developed by Ian Goodfellow and his team in 2014, which revolutionized AI-based image synthesis techniques [18]. Text-conditional GANs later emerged as the first end-to-end differentiable architectures capable of mapping character-level textual input to pixel-level visual output, although these models were initially trained on relatively small datasets. Subsequent autoregressive methods expanded upon this approach by leveraging large scale training data for text to image generation, as demonstrated by OpenAI's DALL·E model [19]. Several studies have emphasized that the text-to-image generation process mirrors traditional artistic workflows by computationally combining fundamental visual elements such as points, lines, planes, and colors [20]. While these approaches demonstrate technical effectiveness, existing research largely prioritizes image quality, realism, and prompt fidelity, with limited attention given to systematic classification of artistic genres, cultural representation, or stylistic lineage—particularly in non-Western contexts.

2.2 Descriptive, Predictive and Prescriptive

Descriptive analytics refers to the interpretation of historical data to better understand changes that have occurred within a business context [21]. This analytical approach focuses on answering the question "What has happened?" by transforming raw data from various sources into meaningful insights that reflect past events. However, while descriptive analytics can indicate whether a particular outcome is favorable or problematic, it does not provide explanations regarding the underlying causes of such outcomes [22].

Predictive analytics is a critical analytical technique widely used by organizations for multiple purposes, including assessing business risks, forecasting potential market patterns, and determining optimal timing for maintenance activities to enhance organizational performance [21]. Predictive analysis addresses the question

"What is likely to happen?" by using insights derived from descriptive and diagnostic analyses to detect trends, clusters, and anomalies. This capability makes predictive analytics a valuable tool for forecasting future developments within a given system or environment [22].

Prescriptive analytics, meanwhile, focuses on recommending optimal actions by generating actionable insights aimed at maximizing overall returns and profitability. It typically answers the question "What actions should be taken?" and is considered the final stage within the business analytics hierarchy [21]. Although widely used in business and operational domains, prescriptive analytics remains underutilized in AI generated art research. Its potential to guide decision-making—such as defining classification criteria, recommending ethical guidelines, or optimizing genre identification frameworks—has not been fully explored [22].

3. METHODOLOGY

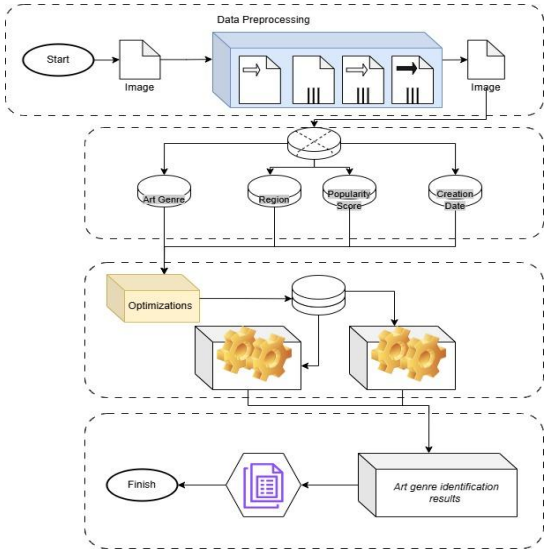

Figure 1: Research Stage [23]

Based on figure 1 Research stage includes 4 phases are dataset description (data processing) [24], Feature Extraction and Exploratory Data Analysis, Predictive and Prescriptive Analysis.

3.1 Dataset Description

The data set used in this study consists of 10,000 records, source from: https://www.kaggle.com/datasets/waqi786/ai-generated-art-trends. The dataset includes several attributes relevant to the analytical process, namely: Artwork_ID, Artist_Name, Art_Style, Creation_Date, Medium, Tools_Used, Popularity_Score, Region, Art_Genre, and Platform.

- Artwork_ID represents the identifier of the AI-generated artwork.
- Artist_Name indicates the AI model or system producing the artwork.
- Art_Style denotes the style of the artwork.
- Creation_Date refers to the date on which the artwork was generated.
- Medium specifies the artistic medium applied.
- Tools_Used describes the AI tools employed in generating the artwork.
- Popularity_Score reflects the popularity level of the artwork.
- Region indicates the geographical region or continent where the artwork is predominantly used.
- Art_Genre identifies the thematic genre of the artwork.
- Platform refers to where the artwork is displayed.

To align with the research objective of identifying genre trends in AI-generated images within Asia, only four attributes are selected for analysis: Art_Genre, Creation_Date, Popularity_Score, and Region. The selection is based on relevance to temporal trend analysis, genre popularity evaluation, and geographical filtering [25] Records are filtered to include only those associated with the Asian region, ensuring contextual consistency.

3.2 Feature Extraction and Exploratory Data Analysis (EDA)

This stage aims to understand the distribution, structure, and initial trends within the dataset through visual exploration techniques. Visualizations such as bar charts and scatter plots are employed to explore relationships between variables, including the association between dominant colors and texture complexity across different art genres. Additionally, cluster analysis is applied to group artworks based on similarities in selected features, while trend lines are used to observe changes in art genre production over time. This combination of exploratory methods provides the foundation for subsequent predictive and prescriptive analyses.

3.3 Predictive Analysis

In the predictive analysis phase, statistical and machine-learning techniques are utilized to forecast future behaviors, particularly the potential popularity of art genres. Tableau's forecasting feature is applied using the Exponential Smoothing method. Time Series Forecasting Using Simple

Exponential Smoothing (SES). SES is selected because the data exhibits no observable trend or seasonal pattern, making SES the appropriate model assumption for stable time-dependent data. Additionally, trend lines derived from time series analyses are used to identify long-term patterns in AI generated artwork production, while correlation analysis assesses relationships such as color dominance within specific genres. Clustering further assists in discovering genre patterns appearing frequently during certain time intervals [26].

3.4 Prescriptive Analysis

The prescriptive analysis phase translates analytical findings into actionable recommendations. Interactive Tableau dashboards are developed to allow stakeholders to explore genre trends dynamically. What-if analysis is performed to simulate changes in key variables, such as increased production of certain art genres or shifts in popularity scores. Based on forecasting outcomes and observed patterns, strategic recommendations are formulated for AI creators, digital artists, and art collectors, highlighting genres with strong growth potential and emerging trends suitable for future exploration. This phase ensures that the analytical results are not only descriptive and predictive but also practical and decision-oriented.

4. RESULTS AND DISCUSSION

At this stage, a descriptive analysis was conducted to identify and understand the fundamental characteristics of AI generated artworks developed within the Asian region. Descriptive analysis serves to interpret historical data and provide an overview of how AI has been utilized in the creation of digital artworks examining aspects such as production volume, genre distribution, and temporal production patterns.

For this study, the dataset was obtained from the Kaggle platform, with a primary focus on the following attributes: Art_Genre, Creation_Date, Popularity_Score, and Region, specifically filtered for Asian countries. The dataset spans a three-year period from 2022 to 2024, enabling a representative observation of temporal fluctuations and evolving trends in AI generated artworks.

A series of visualization techniques including bar charts, scatter plots, trend lines, and cluster analysis was applied to uncover hidden patterns within the dataset. These visualizations clarify how the number of AI generated artworks has evolved over time, identify which art genres dominate the market, and illustrate the distribution of AI generated creations across months and years.

Through this exploratory approach, several preliminary insights emerge regarding creator behavior and market tendencies within the AI art ecosystem in Asia. For example, certain genres exhibit consistent increases in popularity, while others decline or remain stable. Likewise, the temporal distribution of production activity reveals patterns that may correspond to broader changes in technological accessibility or user engagement.

The descriptive analysis also highlights unusual fluctuations or anomalies in production volume. Significant spikes in artwork creation during specific years or abrupt declines in certain months may signal external influences such as technological breakthroughs, new platform policies, regulatory shifts, or changes in user preferences. Recognizing these irregularities is crucial for constructing a strong analytical foundation for subsequent predictive analysis.

Overall, the findings of the descriptive analysis not only present the data in an organized manner but also contribute essential early insights into the developmental trajectory of AI generated art in Asia. These insights serve as the basis for deeper investigation into the predictive and prescriptive stages of the research.

4.1 Description Analysis

Over the past three years, notable dynamics have emerged in the development of artificial intelligence AI generated artworks across the Asian region. In 2022, the recorded number of AI generated artworks remained relatively low, with only 67 pieces documented. This reflects the early phase of AI adoption within the artistic landscape in Asia. However, a substantial shift occurred in 2023, during which the number of artworks increased sharply to 262. This dramatic rise indicates a heightened level of enthusiasm among both artists and the wider public in exploring AI driven artistic creation. The year 2023 thus appears to represent the peak of AI art production within the observed period.

In 2024, the trend shows a decline, with the number of artworks decreasing to 168. Although this figure is considerably lower than that of the previous year, it remains significantly higher than the output recorded in 2022. This suggests that interest in AI generated art persists, even if it has moderated due to various potential factors, such as market saturation, regulatory developments, or a

shift in attention toward other emerging innovations.

Table 1: Number of AI usage analysis in art in Asia a month in 3 years

Month of Creation Date	Year of Creation Date	Number of Records
September	2022	9
October	2022	19
November	2022	21
December	2022	18
January	2023	30
February	2023	11
March	2023	20
April	2023	19
May	2023	24
June	2023	29
July	2023	21
August	2023	18
September	2023	16
October	2023	28
November	2023	22
December	2023	24
January	2024	21
February	2024	25
March	2024	18
April	2024	19
May	2024	24
June	2024	26
July	2024	20
August	2024	10
September	2024	5

Table 1 shows highlight the fluctuating monthly production of AI generated artworks in Asia from 2022 to 2024. Production peaked early each year, followed by periods of decline. While 2023 exhibited relatively stable output, 2024 showed a consistent downturn after mid-year, reaching its lowest point in September. These trends suggest shifting creative activity and potential external influences on production levels.

Figure 2 presents a data visualization focusing on AI generated artworks produced within the Asian region. The visualization employs a bubble-type scatter plot, where each bubble represents the number of artworks corresponding to a specific category. The dataset is filtered exclusively for the Asia region, ensuring that only artworks originating from this geographical area are included in the analysis. Clustering was performed following the formulas described in Equations 3 through 5.

Figure 2: Clustering Results of the Three Main Genres

In the columns, the data are organized sequentially by Region, Art Genre, Clusters, and Year of Creation Date. This structure allows the visualization to categorize artworks into genre groups such as Mythology, Sci-Fi, and Urban, which are subsequently subdivided into their respective cluster assignments. Each cluster is further detailed by year of creation (2022, 2023, and 2024).

The Y-axis represents the total number of artworks (Number of Records). The bubbles encode two dimensions simultaneously: their size and the numerical label within each bubble indicate the quantity of artworks, while their color represents the year of creation. Blue denotes artworks from 2022, red from 2023, and green from 2024. In addition, variations in shape and size incorporated through the Marks Card in Tableau help differentiate the visual representation across groups.

Table 2: Number of Clustering results

Art Genre	Clusters	Year	Number of Records
Mythology	Cluster 4	2024	39
Mythology	Cluster 5	2022	31
Mythology	Cluster 7	2023	98
Sci-Fi	Cluster 1	2024	70
Sci-Fi	Cluster 1	2023	72
Sci-Fi	Cluster 2	2022	19
Urban	Cluster 2	2022	17
Urban	Cluster 3	2024	59
Urban	Cluster 6	2023	92

Table 2 presents clustering results of AI generated artworks in Asia across three main genres: Mythology, Sci-Fi, and Urban. The bubble chart visualizes relationships among genre, cluster, and year, with bubble size representing artwork counts. The data reveal distinct thematic groupings, such as Mythology Cluster 4 with 39 works in 2024 and Sci-Fi–Cluster 1 with 72 works in 2022, indicating clear patterns in creative output.

4.2 Predictive Analysis

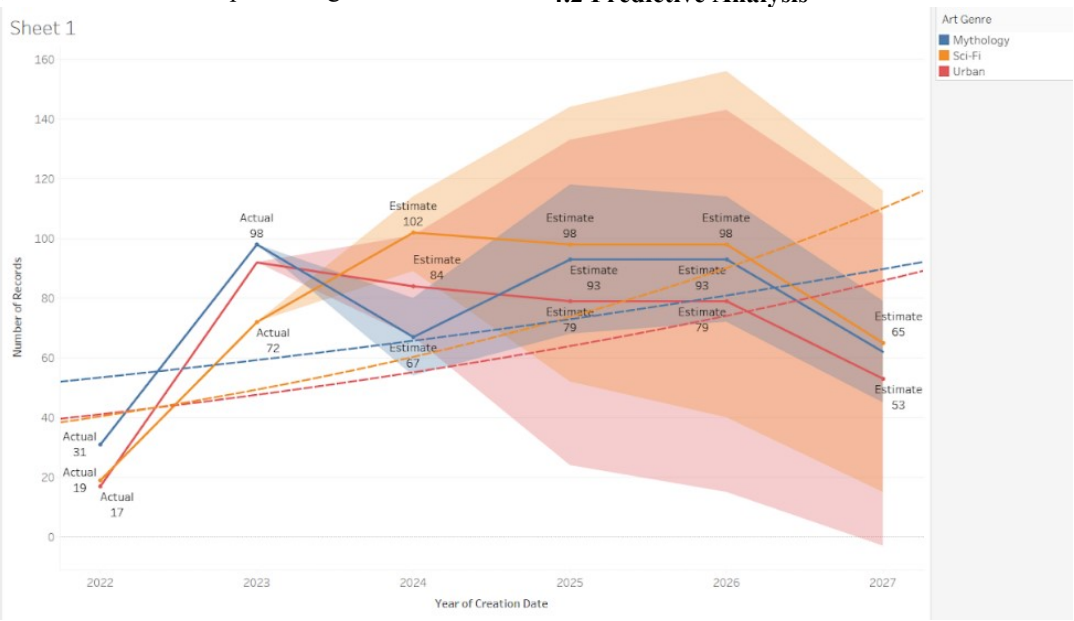

Figure 3: Forecast and Trend Line Analysis for Three Art Genres

Figure 3 was generated by selecting all art genres within the filter settings while maintaining a focus on the Asian region.

Table 3: Number of forecast and trend line analysis 3 genres

Art Genre	Year	ATTR (Forecast Indicator)	Number of Records
Urban	2022	Actual	17
Urban	2023	Actual	92
Urban	2024	Estimate	84
Urban	2025	Estimate	79
Urban	2026	Estimate	79
Urban	2027	Estimate	53
Sci-Fi	2022	Actual	19
Sci-Fi	2023	Actual	72
Sci-Fi	2024	Estimate	102
Sci-Fi	2025	Estimate	98
Sci-Fi	2026	Estimate	98
Sci-Fi	2027	Estimate	65
Mythology	2022	Actual	31
Mythology	2023	Actual	98
Mythology	2024	Estimate	67
Mythology	2025	Estimate	93
Mythology	2026	Estimate	93
Mythology	2027	Estimate	62

The Year of Creation is plotted on the X-axis, whereas the number of artworks is placed on the Y-axis. Each genre is assigned to differentiate both the forecast curves and the corresponding trend lines.

The forecasting function is enabled, allowing each line to extend beyond the end of the actual data into projected future values, which are visualized using dashed lines. A semi-transparent shaded region surrounding each forecast line represents the confidence interval, indicating the degree of uncertainty associated with the prediction for each genre.

This configuration produces a single comparative chart that simultaneously illustrates the historical development and projected trends of the three primary genres Urban, Sci-Fi, and Mythology. The activated trend lines and dashed forecast extensions provide a comprehensive overview of both observed patterns and anticipated genre trajectories over time.

Table 3 presents the trend and forecast analysis for three art genres Mythology, Sci-Fi, and Urban which exhibit significant growth from 2022 to 2023, followed by fluctuations projected through 2027. In 2022, all three genres began with relatively low production numbers: Mythology with 31 artworks, Sci-Fi with 19 artworks, and Urban with 17 artworks. However, in 2023, each genre experienced

a substantial increase, particularly Mythology and Urban, which rose to 98 and 92 artworks, respectively, while Sci-Fi also grew notably with 72 artworks.

Although the data for 2024 to 2027 represent forecasted values, the projections indicate varying trends for each genre. Overall, Sci-Fi demonstrates the most consistent upward trajectory, reaching its highest predicted value in 2024 with 102 artworks and maintaining comparatively strong performance in the following years, despite a slight decline in 2027. Mythology shows a decrease after its peak in 2023, stabilizing in 2025 and 2026 before declining again in 2027. Meanwhile, the Urban genre displays a steady downward trend from 2023 through 2027.

From the perspective of the trend lines, all three genres exhibit positive overall directions, indicating long-term growth despite short-term fluctuations. The confidence intervals (represented by the shaded areas) illustrate the prediction range, with Sci-Fi displaying the narrowest interval suggesting higher stability compared to the other two genres.

In summary, while all three genres show promising growth potential, Sci-Fi appears to be the most consistent genre and is projected to dominate in the coming years.

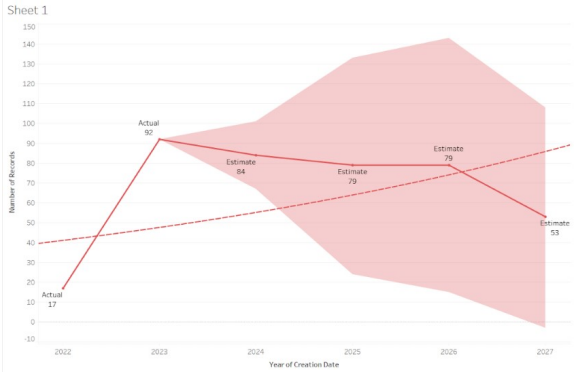

Figure 5: Forecast Analysis and Trend Line for the Urban Genre

Figure 5 is generated by displaying the number of artworks based on their year of creation for the Urban genre within the Asian region. First, two primary variables are selected: Year of Creation Date for the X-axis and Number of Records for the Y-axis. The dataset is then filtered to include only the Urban genre and the Asia region. A line chart is used to illustrate the changes in the number of artworks over time. Subsequently, the forecasting function is enabled, extending the original line which initially represents only historical data into future years as a predictive projection. The distinction between actual and forecasted data is indicated through differing line styles, often shifting from a solid line to a dashed line or remaining solid with a separate label. A transparent red confidence band appears around the forecasted segment, representing the uncertainty interval and illustrating potential variations in the projected values. Through these steps, the visualization provides a continuous depiction of both historical trends and future estimations. A trend line is also activated to reinforce the overall direction of the data.

The Urban genre shows an initially significant increase, rising from 17 artworks in 2022 to 92 artworks in 2023. However, based on the forecast, this genre is projected to experience a gradual decline: 84 artworks in 2024, followed by decreases to 79 in both 2025 and 2026, and further dropping to 53 artworks by 2027. Despite this, the Urban trend line still exhibits a positive trajectory, although with a gentler slope compared to the other two genres. This suggests that although interest in this genre surged at one point, it is likely to experience a slow decline in the coming years. The confidence interval for the Urban genre widens considerably in the later years, indicating a relatively high degree of uncertainty in the long-term projections.

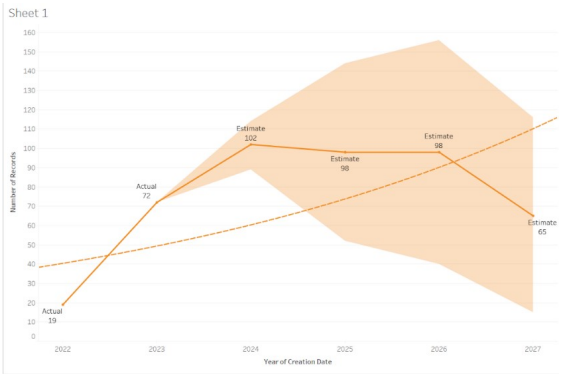

Figure 6: Forecast Analysis and Trend Line for the Sci-Fi Genre

Figure 6 is generated by filtering the dataset to include only the Sci-Fi genre and the Asia region. The year of creation is placed on the X-axis, while the number of artworks is positioned on the Y-axis. These data are visualized using a line chart to illustrate temporal trends. The forecasting function is then activated, allowing the line to extend beyond the historical data range into future years as a projected forecast. A semi-transparent orange band surrounding the forecasted line represents the uncertainty interval, indicating that future values

may vary slightly above or below the main projection line. With this configuration, the visualization clearly displays the progression from historical data to future predictions, including the boundaries of uncertainty within a single, continuous chart. A trend line is also enabled to further emphasize the overall directional movement of the data.

The Sci-Fi genre demonstrates a stable and highly positive developmental trajectory. The number of artworks increased from 19 in 2022 to 72 in 2023. Forward projections indicate continued growth, with the number of artworks expected to peak at 102 in 2024. This figure is predicted to remain relatively stable at around 98 artworks in both 2025 and 2026, before declining to 65 artworks by 2027. The timeline for Sci-Fi exhibits a clear upward trend, suggesting a consistent rise in the popularity of this genre. Additionally, the Sci-Fi confidence interval appears narrower than that of the other genres, indicating that the forecasts for this category are more stable and reliable.

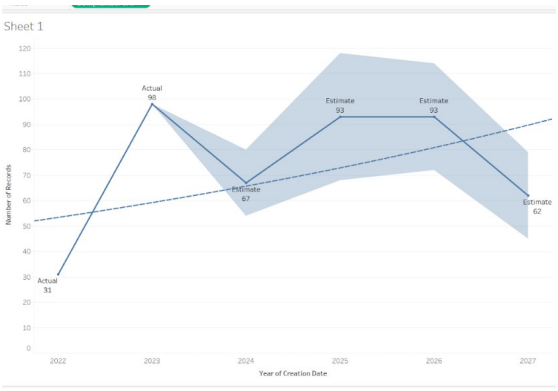

Figure 7: Forecast Analysis and Trend Line for the Mythology Genre

Figure 7 is produced by applying filters to include only the Mythology genre within the Asia region. The year of creation is assigned to the X-axis and the number of artworks to the Y-axis, visualized through a linear line chart that represents the progression of historical data. The forecasting function is then enabled, allowing the line to extend beyond the last year of actual data into future projections. A transparent blue band surrounding the forecast line represents the uncertainty interval, illustrating the potential range of variation in the predicted values. With this configuration, the visualization seamlessly displays the relationship between historical patterns and future estimations. Additionally, a trend line is included to highlight the overall long-term direction of the data.

The Mythology genre demonstrates a strong initial growth pattern. In 2022, the number of artworks recorded was 31, which then sharply increased to 98 in 2023. However, the forecast results indicate a decline to 67 artworks in 2024. This is followed by an upward movement in 2025 and 2026, reaching 93 artworks, before decreasing again to 62 in 2027. Although the projected data reveals fluctuations over the forecast period, the trend line continues to move upward, suggesting that long-term interest in the Mythology genre remains strong. The confidence interval for this genre appears to be moderate, indicating a medium level of uncertainty in predicting future artwork production.

4.3 Preskriptif Analysis

Based on the analyses conducted in both the descriptive and predictive stages, several key issues affecting the development of AI generated artworks in the Asian region have been identified. First, there is a noticeable fluctuation in the production levels of AI based artworks, particularly following the peak in 2023. This pattern indicates potential market saturation and a shift in audience interest. Second, although the primary genres Sci-Fi, Urban, and Mythology demonstrate substantial potential, the trendline and forecasting results suggest that all three may experience declining growth in the coming years if significant innovation is not introduced. Additionally, the clustering analysis reveals limited thematic and visual exploration, as many artworks continue to rely on repetitive stylistic patterns. Another issue that emerges is the presence of bias in AI image-generation data and algorithms, as well as creativity constraints that arise from dependence on existing AI models [27].

A set of strategic recommendations can be proposed to foster more sustainable growth in this field. The analysis indicates that the three major genres Sci-Fi, Urban, and Mythology exhibit different developmental dynamics, suggesting that each genre requires a tailored creative development approach. The Sci-Fi genre demonstrates the most consistent growth and is projected to remain the strongest genre through 2027. This finding implies that AI creators should expand their exploration of futuristic themes, including advanced technologies, space exploration, virtual reality, and post-apocalyptic worlds. Artworks that incorporate imaginative visualizations and compelling futuristic narratives have greater potential to capture public attention. In line with this trend, creators must not only innovate visually but also integrate strong

storytelling elements into their works to enhance engagement and increase market value [28].

Meanwhile, the Urban and Mythology genres display more volatile patterns. The Urban genre, which experienced a significant spike in 2023, is forecasted to decline gradually. To counter this trend, creators are encouraged to adopt more innovative approaches, such as blending Urban themes with local cultural elements or futuristic motifs. Such combinations may lead to emerging subgenres with stronger relevance and appeal. For instance, the concept of Urban Mythology, which adapts ancient myths into modern cityscapes, could serve as a creative direction that broadens audience reach [29].

Visualization standpoint, the clustering analysis highlights the importance of color and texture selection. For the Sci-Fi genre, the use of contrasting colors such as electric blue, neon purple, and metallic silver, combined with refined high-tech textures, can enhance visual appeal. In contrast, the Urban genre benefits from more natural color palettes such as greys, earthy browns, and deep blues paired with coarse or semi-coarse textures to convey authenticity and urban realism. In the Mythology genre, warm colors such as gold, maroon, and rich navy, along with intricate and highly detailed textures, are recommended to reinforce classical and epic atmospheres [30].

One notable anomaly is the sharp production spike in 2023, followed by a decline. Rather than indicating model weakness, this pattern reflects external factors such as rapid AI tool adoption and subsequent market saturation. While the proposed analytical framework successfully captures macro-level trends, it is less effective in predicting abrupt, event-driven changes.

Another limitation lies in dataset bias, as AI generated artworks are influenced by the training data and dominant cultural aesthetics embedded within AI models. This limitation affects both clustering diversity and predictive accuracy. Nevertheless, the integrated use of descriptive, predictive, and prescriptive analytics provides a comprehensive and interpretable framework that outperforms single-method approaches by offering not only trend identification but also actionable insights [31].

From the perspective of digital art platforms or marketplaces, platform developers are encouraged to provide simplified analytic features that allow creators to monitor their artwork performance in real time. These features may include:

From a platform perspective, the findings emphasize the importance of embedding analytic tools into digital art marketplaces. Performance dashboards, sentiment analysis, and audience analytics enable creators to respond dynamically to audience feedback and evolving trends [32], [33], [34]. These tools complement the proposed method by enabling continuous data-driven iteration, thereby mitigating the risks of saturation and creative stagnation.

4. CONCLUSION

This study analyzed trends in AI generated artworks in the Asian region using an integrated framework of descriptive, predictive, and prescriptive analytics. The findings indicate a pronounced increase in AI generated art production in 2023, followed by a decline in 2024, suggesting a phase of market saturation and evolving audience preferences. Despite this fluctuation, overall interest in AI generated art remains substantial. Three dominant genres Sci-Fi, Urban, and Mythology were consistently identified, with the Sci-Fi genre exhibiting the most stable growth trajectory. In contrast, the Urban and Mythology genres demonstrate declining trends in the absence of sustained innovation.

The results further reveal a tendency toward stylistic repetition, indicating limited thematic and visual exploration within dominant genres. Although the subjective and complex nature of stylistic and thematic attributes poses methodological challenges, the data-driven approach adopted in this study successfully captures macro level patterns and genre-level tendencies. These findings provide empirical support for strategic decision-making in AI based creative practices and highlight the importance of adaptive and innovation-driven approaches to sustain long-term development in AI generated art ecosystems.

Several limitations should be acknowledged. First, the analysis relies on a single publicly available dataset, which may not fully represent the breadth of AI generated artworks across diverse platforms and cultural contexts in Asia. Second, genre and style classifications are based on predefined labels, potentially oversimplifying the fluid and evolving characteristics of AI generated art. Third, the use of Simple Exponential Smoothing for forecasting assumes relatively stable temporal behavior and may not adequately capture abrupt shifts driven by technological, social, or market-related factors.

Future research should prioritize the development of automated classification frameworks for AI generated art using machine learning, computer vision, and natural language processing techniques applied to both visual and textual data. Establishing a standardized and culturally sensitive taxonomy of genres and styles would enhance analytical precision and cross-study comparability. In addition, incorporating cross-platform data from social media, digital art marketplaces, and online galleries would enable a more comprehensive understanding of audience engagement and cultural diffusion. Advances in these directions would contribute to a more rigorous and scalable analytical foundation for studying AI generated art and support the sustainable evolution of AI driven creativity in the Asian context.

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