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CLUSTERING MUSEUM VISITORS ON XIAOHONGSHU: A COMMUNICATION STRATEGY FOR GLOBAL TOURISM

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ABSTRACT

Digital tourism has made social media essential for sharing travel experiences and co-constructing cultural narratives. China's millennial and Gen Z lifestyle platform Xiaohongshu (Little Red Book) discusses museums. This study examines Xiaohongshu users' content sentiment, communication, and engagement with global superstar museums. For strategic communication and digital tourism planning, it segments users into meaningful audiences and The Louvre, Museum of Modern Art, and British Museum are tagged in 500 Xiaohongshu posts. Natural language processing and behavioural analysis extracted post frequency, sentiment score, engagement rate, hashtag diversity, and topic frequency. Traditional preprocessing included tokenization, stop-word removal, and sentiment scoring. Latent Dirichlet Allocation topic modelling revealed main themes. Principal component analysis reduced dimension and supported K-means clustering and Davies-Bouldin Index and Silhouette Score confirmed cluster validity and cohesion. Data showed passive or informational users share neutral, factual content with little interaction. Two groups of lifestyle-oriented, emotionally expressive users created visually curated, engaging content related to personal branding or influencer behaviour. A third group of knowledge-seekers posted often and wrote reflective, thematic stories about education or heritage. Behaviour, emotion, and communication vary by user group, affecting tourism marketing and digital engagement. This study shows how aesthetics, tone, and engagement practices segment platform-native ecosystem users into communicative micro-communities. It helps museums and tourism boards plan influencer collaboration, audience-specific content, and data-driven campaigns. By matching storytelling to user behaviour, institutions improve culturally sensitive digital tourism communication. In a connected world, computational social research and tourism communication reveal how digital publics interact with cultural institutions.

KEYWORDS: Digital Tourism Communication, User Segmentation, Social Media Analytics, Cultural Heritage Marketing, Xiaohongshu (Little Red Book).

1. INTRODUCTION

Social media has expanded beyond interpersonal communication to influence public discourse, consumer behaviour, and global mobility. One of the hardest hit is tourism. As the travel industry goes digital, Instagram, TikTok, and Xiaohongshu (Little Red Book) help people find, evaluate, and choose destinations (Mallick & San, 2023; Zhou, 2023). These platforms co-create cultural meaning, circulate aesthetic values, and accumulate symbolic capital through visual storytelling and performative engagement. This has reduced tourists' reliance on marketing materials and travel guides. For trip planning, they follow influencers, digital micro-communities, and algorithmically curated content. In the age of digital tourism, museums and other cultural institutions must understand these platforms' communication styles to stay relevant (Falco, 2020).

Unique features distinguish Xiaohongshu from other tourism communication platforms. After starting as a cross-border e-commerce platform in China, Xiaohongshu has grown into a lifestyle-focused social media ecosystem with user reviews, aesthetic recommendations, influencer culture, and commercial transactions (Lambrini, 2023). Unlike Instagram and TikTok, Xiaohongshu blends storytelling, identity, and aspirational consumption. This hybrid model has made Xiaohongshu popular among Chinese millennials and Gen Z users who share experiences and research products, services, and destinations. Xiaohongshu is popular for travel content, where users post about their international cultural stops. The platform's influence on travel aspirations and cultural consumption grows as post-pandemic Chinese outbound tourism evolves (R. Si, 2021).

A museum's long-term media presence can directly impact its ability to sustain visitor growth. As demonstrated in a network study of the Guggenheim Museum Bilbao (GMB), the institution maintained a central position in global media, particularly in the New York Times, over a 20-year period, which reinforced its visibility and helped drive continuous tourism and local economic regeneration (Plaza, Aranburu, & Esteban, 2022). This illustrates the powerful role sustained media exposure plays in shaping and maintaining a museum's global tourist appeal.

Interesting is the rise of "superstar museums" in this digital ecosystem. The Louvre in Paris, the Museum of Modern Art in New York, and the British Museum in London are famous cultural institutions with strong brands and historical and aesthetic significance. These museums are often featured on social media due to their famous architecture, collections, and status as must-see destinations (Morrison, 2022; Su, 2020; Azpíroz et al., 2024). Media exposure for superstar museums is often concentrated among a few top institutions. As Plaza, Aranburu, and Esteban (2022) point out, these museums must become media celebrities to maintain their visibility and attract global visitors. Drawing on Rosen's "Superstar Economics" framework, they emphasize that media attention is not evenly distributed it focuses on a small number of highly recognized museums, whose repeated appearance in influential outlets reinforces their dominance.

Superstar museums are experienced, curated, and performed on Xiaohongshu. Users express personal taste, social status, and cultural capital by posting carefully crafted photos and emotional stories about their visits. As digital narratives spread, museums join a global communicative economy negotiating visibility, engagement, and meaning online. Most museums have adopted social media, but most still use one-size-fits-all communication strategies that ignore user preferences and behaviours (Liu, 2024; Simo, 2020). Even though superstar museums and Xiaohongshu are cultural tourism platforms, data-driven communication strategies are underutilized. Research has examined social media's effects on tourism decision-making, digital storytelling aesthetics, and travel mediators. Few studies segment and analyse museum user behaviour using computational methods (Cao et al., 2024; N. Yin, 2023; H. Zhu et al., 2024b). Most tourism communication strategies ignore digital engagement's complexity by using age, gender, and nationality. Few studies examine how emotional tone, content structure, engagement behaviour, and thematic interests affect online museum engagement (Neito-Ferrando et al., 2023). Social platforms like Xiaohongshu have diverse user motivations, expectations, and representational practices that general communication strategies ignore (S. Wu & Yezhova, 2023).

This study fills this gap by clustering Xiaohongshu users by superstar museum behaviour and content. Instead of demographics, the study classifies users by post frequency, engagement rate, sentiment expression, hashtag diversity, and thematic focus. These variables are derived from curated user-generated posts using natural language processing and content analysis. Finding meaningful clusters or interest groups that reflect platform communicative micro-communities is the goal. To understand how users interact with cultural

institutions online, each cluster's narrative style, emotional tone, and communicative behaviour are examined. The study moves towards intelligent audience segmentation based on interaction patterns rather than assumed preferences (Kim & Choi, 2024; Liu et al., 2024).

The research also applies these findings to tourism economy and communication strategies. By identifying clusters with higher engagement, emotional resonance, or thematic alignment, museums and tourism boards can target specific user groups. High-engagement emotionally expressive users may benefit influencer collaborations and storytelling promotions. Frequent analytical or educational posters may prefer long-form content or virtual exhibition previews. This data-driven approach improves communication and creates a more inclusive and participatory cultural tourism model that turns digital audiences into collaborators.

This study's methodological innovation and thematic alignment with tourism communication, cultural consumption, and media studies shifts are noteworthy. The study examines Xiaohongshu, a social media, lifestyle marketing, and transnational tourism platform. Superstar museums add cultural relevance through global heritage and soft power. User behaviour analysis using clustering algorithms advances digital communication research. It shows how large-scale data analytics can reveal cultural engagement, aesthetic preference, and emotional response patterns, expanding theory and strategy (Connell et al., 2024; Gan, 2024).

Communication science guides tourism strategy, platform studies reveal cultural trends, and computational methods understand complex digital ecosystems.

Research linking platform-native user behaviour to cultural strategy is crucial as museums and tourism institutions rebuild post-pandemic engagement online. Communication professionals, cultural managers, and tourism planners can use user data to create smarter, more engaging campaigns that meet digital publics' changing needs, according to this research.

The rise of social media platforms like Xiaohongshu, the global appeal of superstar museums, and the need for precision-driven communication strategies make this study crucial. User clusters based on behavioural and content variables are identified and analysed in this research to improve digital tourism communication. It enhances digital cultural engagement tools and improves culturally and contextually meaningful communication strategies.

2. LITERATURE REVIEW

2.1 Digital Media and Tourism Behavior

Digital platforms have changed travel planning, inspiration, and reflection. User-generated content is important as tourists rely more on others' experiences than institutional marketing. Vacation photos, videos, and posts validate and evoke emotion. Visual platforms reward emotional, symbolic, and well-crafted content, encouraging aspirational travel. To build social capital, travelers seek authentic experiences and content to share, like, and comment. Social media promotes destinations' image. They shape places' images with algorithmic curation, popular visual styles, and viral trends. User networks and platform culture damage tourism boards' reputations (Wright, et al., 2023). Color palettes, perspective, and atmosphere influence visual platforms' location values. Tourism and digital performance make destinations self-expression symbols (J. Li et al., 2024; R. Li, 2024; Yicong, 2022).

Beyond beauty, emotional storytelling matters in this ecosystem. Awe, inspiration, nostalgia, and disappointment from tourists affect places (Fan & Zhang, 2023). Emotional dynamics strongly affect platform engagement and algorithmic future visibility. Travel communication is emotional, and social validation reinforces content and destinations. Few studies have examined how platform-native behaviours like post frequency, emotional tone, and narrative depth affect user influence and strategic communication potential (Bai, 2025; Guo, 2022; Zhang et al., 2023). User-generated content affects travel flows and public perception. Also neglected is how these variables cluster in digital micro-communities. There is little digital tourism research on emotional engagement, user behaviour, and strategic audience segmentation (Gao et al., 2022; C. Si & Leou, 2023).

2.2. Xiaohongshu's Role in Transcultural Communication

Xiaohongshu stands out among global social media platforms as a lifestyle-driven network and consumer-oriented recommendation engine. The interface and content norms encourage highly curated posts with personal reflection, aesthetic storytelling, and subtle product or place promotion (J. Wang, 2024). Unlike Western platforms, Xiaohongshu engages users with longer, narrative-rich content. It encourages aspirational and performative travel stories. The platform promotes unique transcultural communication, especially among Chinese tourists. Visitors to famous global

museums often view things culturally. History and academic value may be replaced by fashion, family, food, and symbolism. Localizing global culture through values and storytelling. Xiaohongshu is a real-time transcultural storytelling platform where users filter global experiences through social norms, aesthetics, and aspirations (Khan et al., 2024; Lei et al., 2023; Ying et al., 2024).

Algorithmically recommended content in Xiaohongshu creates communities around shared values, interests, and styles. These informal communities are based on behaviour and content, not identities (Yang & Wardi, 2024; Y. Zhu, 2023). The dynamic makes Xiaohongshu ideal for communicative micro-communities groups of users who speak similarly but do not know each other. Platform design and user intent shape these communities' aesthetics, narratives, and themes. Xiaohongshu is increasingly recognized for its effects on consumer behaviour and cultural expression, but its effects on museum digital representation are unknown. Few tourism studies have computationally segmented Xiaohongshu users by behaviour. Strategic communication, digital storytelling, and transcultural media in cultural tourism are understudied (Y. Wang, 2024; M. Yin & Sorokina, 2023; H. Zhu et al., 2024a).

2.3. Clustering in Communication Research

When labelled data is unavailable, data science and machine learning cluster large datasets for patterns. Communication studies group audiences by behaviour, not demographics. This behavior-first approach helps researchers and practitioners find latent communities groups of users who interact with content similarly but appear unrelated (Q. Wu et al., 2024; Xiaoxin et al., 2025). Clustering describes how fragmented, highly individualized digital media publics form, interact, and influence each other. Tourism research increasingly groups travelers by preferences, decision-making, and content engagement. Travel frequency, sentiment, content themes, and engagement cluster. Users benefit from groupings in tourism, marketing, and communication. Clustering shows trends and under-represented audiences, improving outreach (Guo et al., 2024; Meng, 2025).

Outside tourism, media and communication cluster. Comment threads, social media, and visual aesthetics have been studied to understand online subcultures and thematic groups. Clustering users by content genres, emotional tones, or interaction patterns reveals online meaning-making social organisation. Combining it with sentiment analysis or topic modelling shows digital communication in multiple dimensions. Cultural institution and digital public studies underuse clustering despite its value (Chen et al., 2024; Connell et al., 2021; Wright, et al., 2023). Museums understand online audiences without data using generalized user profiles or static marketing personas. Institutional communication is separate from audience experience. Clustering social media data about museum experiences can reveal naturally occurring audience segments like emotionally expressive influencers, informational sharers, and culturally inquisitive explorers who may respond differently to content or campaigns (Lei et al., 2023; C. Si & Leou, 2023; Y. Wang, 2024).

The literature doesn't cluster museum content engagement to explain why. Few studies have examined Xiaohongshu behavior-based segmentation for global museum engagement. The gaps prevent institutions from creating targeted strategies that reflect real user preferences and behaviours, especially in transcultural contexts where emotional tone, aesthetic sensibility, and thematic focus affect content reception.

3. RESEARCH METHODOLOGY

3.1. Research Design

This quantitative, exploratory and data-driven study uses communication science and computational social research. Understand Xiaohongshu users' communicative behaviours and thematic interests when viewing global superstar museum content and develop strategic tourism economy guidance based on user segmentation. Exploratory research finds interest clusters by identifying naturally emerging user groups without predefined categorizations. Qualitative interpretation, quantitative clustering algorithms, and communication theory reveal tourism-related UGC patterns that reflect aesthetic preferences, discursive practices, and interests. The method examines how visual narratives, platform-native communication, and cultural content shape Xiaohongshu's interest-based digital communities. This study uses computational content analysis, machine learning-based clustering, and communicative profiling.

3.2. Data Source and Collection

This study used only data from Xiaohongshu (RED), a Chinese social commerce and lifestyle platform with visual content, product recommendations, and social storytelling. The platform influences Chinese outbound travelers and culturally inclined users, making it ideal for digital

tourism communication research. Custom Python web scraping using Selenium and Beautiful Soup collected public posts. Content tagged with keywords and hashtags related to the Louvre Museum in Paris, MoMA in New York, the British Museum in London, the Uffizi Gallery in Florence, and the Van Gogh Museum in Amsterdam was collected. To ensure linguistic inclusivity, initial query strings included #卢浮宫, #大英博物馆, #MoMA艺术, and #博物馆打卡 (Louvre, British Museum, MoMA Art, and Museum Check In). The dataset includes January–December 2024 posts that show seasonal and temporal travel discourse variation.

About 5,000 unique posts from 3,200 user accounts were collected, including textual and visual metadata. Each post's caption, timestamp, user ID (later anonymized), likes, comments, hashtags, geolocation tags, image metadata like image count and dominant color profile were collected. We also collected follower count, total posts, museum-related content frequency, and user location. This rich feature set enabled semantic and behavioural clustering.

3.3. Data Preprocessing and Feature Construction

After data collection, extensive preprocessing prepared it for analysis. All text was stripped of punctuation, emojis, irrelevant Unicode characters, and HTML tags. Normalizing lowercase and linguistic variants normalized text. The Jieba library tokenized Chinese, while spaCy processed English. Stop words were removed in both languages, and stemming and lemmatization clarified term frequencies.

Text data was structured by NLP. SnowNLP for Chinese and VADER for English sentiment analysis gave -1 to +1 polarity scores. LDA topic modelling revealed art appreciation, cultural tourism, photography aesthetics, and influencer-style recommendations as corpus themes. Each user received a multi-dimensional feature vector with content-based and behavioural indicators.

These included post frequency, average sentiment score, hashtag diversity, preferred museum categories (modern art, history, science, or design), average engagement metrics (likes and comments normalized by follower count), and content format (narrative, visual-heavy, or review-style Using visual image metadata, a basic convolutional neural network model classified posts as selfies, museum interiors, artwork details, or souvenirs A highly textured dataset was created for high-resolution user clustering.

3.4. Clustering and Analytical Techniques

User-level feature vectors were clustered using unsupervised machine learning. Because it efficiently groups large datasets into numerical and categorical groups, K-means clustering was used. The optimal number of clusters (K) was determined by examining the point at which within-cluster variance decreased with more clusters using the Elbow Method. Silhouette Analysis then verified the clustering structure's internal consistency by matching data points to clusters. DBSCAN (Density-Based Spatial Clustering of Applications with Noise) was used in the comparative analysis to identify irregular-shaped clusters and filter out noise and outliers to overcome centroid-based clustering's limitations. PCA lowered dimension for cluster visualisation and interpretation.

Qualitative analysis identified communicative traits, content preferences, and travel motivations in each cluster. Informational and documentary posts about history and museum architecture dominated some clusters, while aesthetic, influencer-style photography and lifestyle branding dominated others. The interpretive step placed computational results in communication behaviours rather than statistical artefacts.

3.5. Ethical Consideration

Quantitative metrics and qualitative triangulation verified clustering results. Silhouette Coefficient and Davies-Bouldin Index scores assessed cluster separation and compactness internally. Each cluster had three tourism communication and digital media analysts manually review 200 posts. Cohen's kappa measures inter-coder reliability, and thematic consistency verifies cluster interpretation. Interpretive profiling with cluster-specific tag clouds, sentiment trendlines, and post-engagement histograms improved explanation.

The study focused on ethics. Platform policies and data protection standards were followed when collecting public data for this study. Before analysis, user IDs and personal data were anonymized to prevent re-identification.

The AoIR ethical guidelines prioritized user privacy, transparency, and minimal harm. Data was stored and processed on secure, encrypted servers without user interaction. The methodology also meets the GDPR and PIPL, ensuring legal and ethical compliance across jurisdictions.

Table 1 explains each variables of this study used for data analysis.

Table 1: Variables Measurement.

Variable Name	Measurements
Post Frequency	Number of museum-related posts by a user in a specified period.
Engagement Rate	Average likes and comments per post normalized by follower count.
Hashtag Diversity	Number of unique hashtags used across posts, reflecting topic range.
Museum Category Preference	Dominant type of museum content user posts about (art, science, etc.).
Content Format	Type of content shared: narrative, visual-heavy, review, etc.
Sentiment Score	Polarity of user sentiment in posts, derived from text analysis.
Topic Frequency	Frequency of thematic keywords extracted via NLP.
User Cluster Membership	Label assigned to user group through clustering algorithm.
Cluster Engagement Trend	Average engagement behavior within each cluster group.
Tourism Strategy Fit Score	Score indicating alignment of a cluster with strategic tourism goals.
User Location	Userâ€™s geographical location, affecting exposure and travel potential.
Follower Count	Number of followers; proxy for user influence.
Post Timing	Time of posting; includes seasonality and museum events.
Language Used	Language used in posts; affects reach and clustering.
Account Type	Type of account (personal, influencer, organization).
Platform Activity Duration	Length of user's activity on the platform.
Museum Seasonality Index	Index reflecting peak museum visiting seasons or events.

4. DATA ANALYSIS AND FINDINGS

Xiaohongshu users who shared global superstar museum content are analysed in this section. Users' behavioural and content-based traits are analysed using quantitative and computational methods from communication science and social media analytics. To inform targeted tourism economy strategies, identify user segments by posting behaviour, sentiment expression, engagement patterns, and thematic preferences. Descriptive statistical analysis examined post frequency, engagement rate, sentiment score, hashtag diversity, and topic frequency. User-level feature vectors were created from these variables for clustering. NLP keyword extraction and topic modelling identified post themes and user interests. Clustering algorithms like K-means and DBSCAN found latent audience segments. At each analysis stage, figures and tables provide statistical depth and intuitive interpretation. The findings show how museum content circulates on Xiaohongshu and how to strategically engage different user groups.

Table 2: Descriptive Statistics of Key Independent Variables.

Variable	Mean	Standard Deviation	Minimum	Median (50th Percentile)	Maximum	Skewness	Kurtosis
Post Frequency	9.91	3.23	1	10	20	0.2	-0.17
Sentiment Score	0.01	0.58	-0.99	0.03	1	-0.04	-1.19
Engagement Rate	28.5	15.44	0.72	26.33	74.75	0.5	-0.37
Hashtag Diversity	27.83	12.91	5	28	49	-0.02	-1.11
Topic Frequency	4.94	2.64	1	5	9	-0.01	-1.3

Table 2 statistically summarizes Xiaohongshu user segmentation by post frequency, sentiment score, engagement rate, hashtag diversity, and topic frequency. These variables help explain communication and interest-based clustering. Despite moderate posting behaviour, users shared nearly 10 museum-related posts on average during the study. A near-zero mean sentiment score (0.007) indicates neutral user posts. However, the wide range (-0.993 to 0.996) and relatively flat distribution (kurtosis = -1.190) suggest user emotional expression varied greatly. The high variance (238.296) and average engagement rate (28.504%) indicate that some users are prioritized. The mean hashtag count is 27.830, and users discuss many topics (4.944). Skewness and kurtosis across variables indicate non-normal distributions, requiring outlier- and variance-resistant clustering. These statistics show user behaviour heterogeneity and support clustering algorithm segmentation.

The study's conceptual framework from user-generated data to strategic communication outcomes is shown in Figure 1. A communication science and computational research paradigm integrates data sources, variables, preprocessing, clustering logic, validation, and output strategy. Start with Xiaohongshu UGC. The data includes multilingual posts, captions, hashtags, and user interaction from global superstar museum visits. For analysis, the framework divides raw data into behavioural and

content variables. Content variables like sentiment scores and topic frequency are NLP-extracted content variables, while post frequency and hashtag diversity are user behaviours.

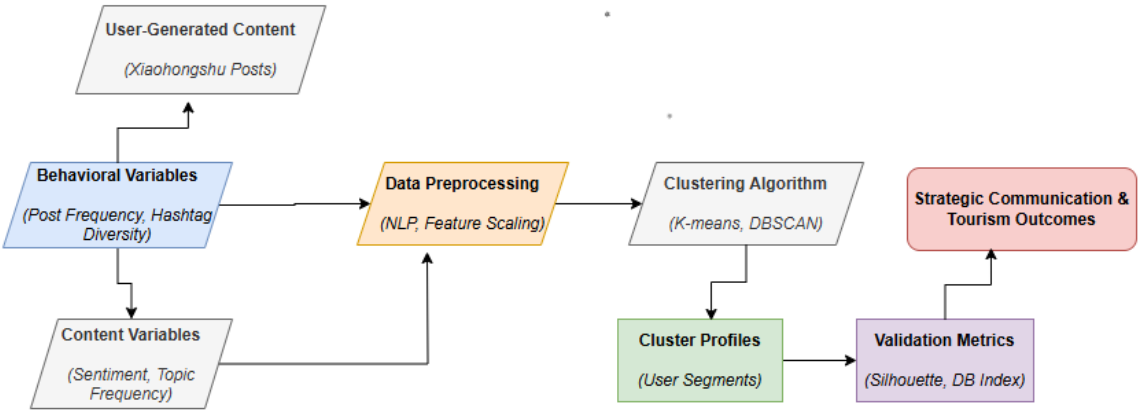

Figure 1: Conceptual Framework of the Study.

Data Preprocessing cleans, normalizes, and clusters variables using NLP and feature scaling. K-means and DBSCAN segment users into meaningful behavioral-content groups in the Clustering Algorithm. Cluster Profiles show audience types and communication styles. Validation Silhouette Score and Davies-Bouldin Index measure segment cohesion and separation for model reliability. These clusters' insights inform Strategic Communication & Tourism Outcomes content strategies, influencer targeting, and campaign design based on audience preferences and platform behaviour. This framework connects computational social science and strategic communication in digital tourism by organizing and linking analytical workflows to actionable outputs.

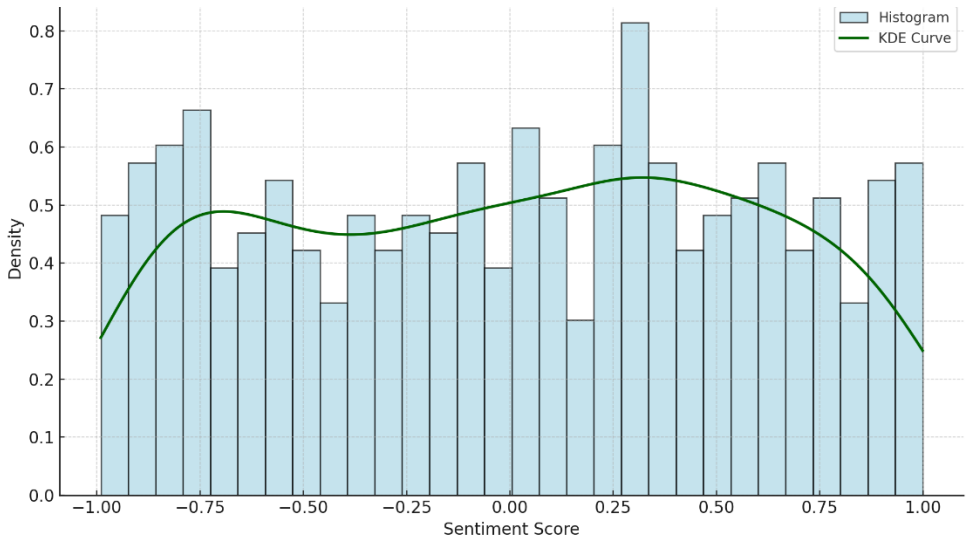

Figure 2: Sentiment Score Distribution across Posts.

Figure 2 shows the emotional range of Xiaohongshu global superstar museum posts. To simplify trend interpretation, the Kernel Density Estimate (KDE) curve smooths the sentiment score frequency distribution histogram. From -1 (strongly negative) to +1 (strongly positive), text content-based sentiment scores show how museum visitors feel. Since the KDE curve peaks slightly above 0, most posts are neutral to mildly positive. The central histogram bars suggest users express balanced or positive emotions rather than extreme ones. Most scores are between -0.5 and +0.5, but outliers show that some users strongly criticize or enthusiastically praise their museum visits. The distribution is nearly symmetrical with a slight positive skew, suggesting users prefer positive emotions. This visual distinction

between discrete frequency (histogram) and continuous density (KDE) shows where most sentiment scores are and the platform's emotional discourse's shape and fluidity. This supports Xiaohongshu's museum content being inspirational, informative, or beautiful rather than controversial or negative. The affective tendencies in this figure help cluster users and guide digital tourism economy communication strategies.

Figure 3: Word Cloud of Dominant Hashtags by Cluster.

Figure 3 shows thematic focus and audience communication patterns by cluster of Xiaohongshu users' most popular hashtags. A cluster's word cloud displays the most common hashtags, with font size indicating frequency and color aesthetic variation. The figure shows user segments' interests, cultural affiliations, and stylistic preferences. Cluster 1 fans of classical and iconic museums use #Louvre, #ParisArt, and #Monalisa, indicating they like world-famous art and romanticized European heritage. #ArtLovers and #MuseumVibes are emotional and visually appealing. This group likely values digital storytelling and prestige. Modern, urban, and minimalist art dominate Cluster 2, as #ModernArt, #MoMA, and #UrbanArt show. This segment is likely younger, trend-focused users who like clean design and conceptual content. Like minimalist or experiential museum exhibits, they promote lifestyle branding and modern culture. Cluster 3 emphasises history and culture. British Museum, Ancient Artefacts, and History Buff hashtags indicate educational and documentary content. Academic and culturally curious users like historical narratives, learning, and in-depth content. The figure shows Xiaohongshu's diverse user interests and storytelling styles. It suggests that hashtag usage reflects content themes and is a form of digital self-positioning, which is crucial for tourism communication strategies that target specific audiences.

Table 3: Topics and Themes from LDA Topic Modelling.

Topic	Thematic Label	Top Keywords	Proportion of Posts	Interpretation
Topic 1	Classical Art & European Architecture	art, louvre, architecture, uffizi, blew, florence	0.22	Focuses on traditional European art and iconic museums such as the Louvre and Uffizi. Emphasis on aesthetics, sculpture, and architectural appreciation.
Topic 2	Cultural Heritage & Historical Exhibitions	museum, british, history, loved, egyptian, exhibition	0.305	Centers on historical and archaeological themes including Egyptian, medieval, and global cultural artifacts. Appeals to users interested in history and education.
Topic 3	Modern Art & Personal Expression	moma, art, portraits, van, gogh, self	0.475	Represents contemporary art spaces like MoMA and the Van Gogh Museum. Posts highlight emotional responses, self-expression, and immersive experiences.

Table 3 shows the thematic structure of Xiaohongshu posts extracted using Latent Dirichlet Allocation (LDA), a topic modelling method that finds patterns in text-based user content. Topics are thematic clusters based on dominant keywords and content orientation, with a proportional number of posts per theme. The table shows how museum visitors interact with content in diverse and meaningful ways and quantifies thematic focus with qualitative interpretation. Topic 1, "Classical Art & European Architecture," covers 22.0% of the dataset and includes art, louvre, architecture, uffizi, blew, and florence. This group loves European art, especially the Louvre and Uffizi Gallery. Geographic and architectural terms emphasize grandeur, elegance, and historical significance. When people say "it blew me away," they mean classical museums' immersive, awe-inspiring experience. This theme tells stories of admiration, sophistication, and personal discovery about beauty, prestige, and curated cultural identity.

Topic 2 "Cultural Heritage & Historical Exhibitions," comprises 30.5% of the dataset and includes museum, british, history, loved, egyptian, and exhibition. For British Museum visitors, this theme emphasises historical exploration and academic curiosity. Archaeology, artefacts, and education dominate. Posts in this cluster are more

analytical or documentary, often with descriptive captions, contextual explanations, or history and civilization reflections. These narratives suggest tourists, learners, and cultural interpreters seek knowledge. Posts can share knowledge, recommend educational exhibits, or document global heritage experiences. Topic 3, "Modern Art & Personal Expression," accounts for 47.5% of posts. Moma, art, portraits, van, gogh, and self suggest contemporary, emotionally charged museum experiences, especially at MoMA and the Van Gogh Museum. An introspective, identity-focused communication cluster. Self and portraits are common in museum visits, suggesting users express their emotions, aesthetics, and thoughts through art. The subjective, reflective, and stylized group posts emphasize mood, creativity, and self-discovery through visual storytelling. Xiaohongshu lifestyle content features museums as destinations and experiential backdrops for curated personal expression.

Lastly, LDA modelling produced three thematic clusters representing user motivations, emotions, and communication styles. Museums are used by Xiaohongshu users to admire classical art, analyse cultural history, and personalize modern art. These findings help segment tourism and cultural promotion audiences and plan strategic communications.

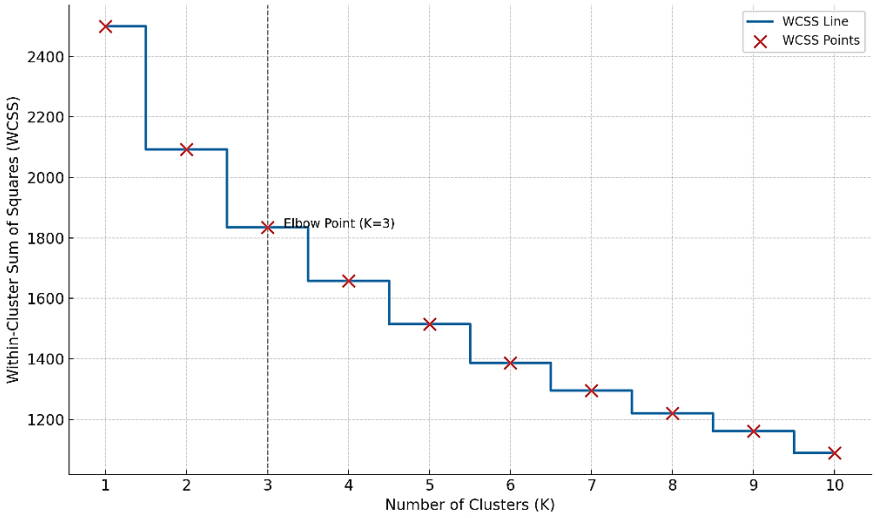

Figure 4: Elbow Curve for Determining Optimal Cluster Count (K).

Figure 4 shows K-means clustering's optimal Elbow Method cluster number (K). K values (1–10) are on the x-axis, and cluster variance is measured by the Within-Cluster Sum of Squares (WCSS) on the y-axis This method minimizes WCSS to promote compact, homogeneous clusters. The plot shows a step-style line with marked data points and an annotated vertical line at K = 3, the 'elbow point'. Additional clusters reduce intra-cluster variance at diminishing returns above K. Thus, WCSS decreases with K, but improvement sharply declines after K = 3. Three user clusters are chosen using a visual inflection point to balance segmentation quality and model simplicity. Here, K = 3 makes statistical and conceptual sense. A natural break in user behaviour is indicated by post frequency, sentiment score, engagement rate, hashtag diversity, and topic frequency. Separating Xiaohongshu users into three groups allows meaningful differentiation without overfitting or fragmenting data. The segmentation strategy is strengthened by this method, silhouette score, Davies-Bouldin index, and qualitative cluster content interpretation. This figure confirms a coherent and interpretable user segmentation structure that can inform tourism communication strategies, enabling further analysis.

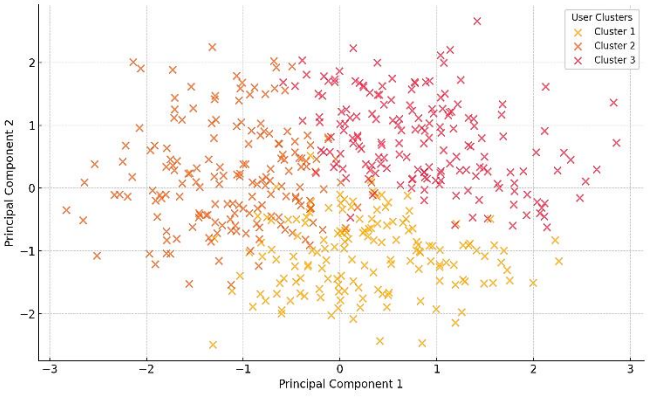

Figure 5: PCA Plot of User Clusters in 2D Space.

Figure 5 shows PCA-visualized K-means clustering of standardized user behaviour and

content features. PCA divides multidimensional feature space into two principal components, revealing user segments. The plot is color-coded by cluster for each Xiaohongshu dataset user and soft-edged to reflect modern visualisation. PC1, "Behavioral & Content Dimension," tracks posting frequency, hashtag diversity, and topic engagement. PC2, "Engagement & Sentiment Dimension," compares user sentiment and normalized engagement metrics. The dataset's variance is mostly explained by these two axes, creating a valid spatial user similarity map. The plot clearly divides the three clusters, supporting the Elbow Method and segmentation internal validity. Museum enthusiasts or focused communicators are concentrated in Cluster 1. Cluster 2 is more dispersed along PC1, suggesting influencers and casual users behave differently. Along PC2, Cluster 3 may have posts with higher emotional engagement or sentiment polarity. This distribution confirms the clustering model found meaningful, non-random user data patterns. The segmentation of Xiaohongshu users into digital tourism communication identities and roles is useful for targeted marketing, personalized content curation, and strategic museum promotion. The model's interpretability and alignment with qualitative content patterns improve with clear cluster visual differentiation.

Table 4: Cluster Profiles and Characteristics.

Cluster	Cluster 1	Cluster 2	Cluster 3
User Count	155	173	172
Avg. Post Frequency	9.155	9.306	11.198
SD Post Frequency	3.226	3.107	2.963
Avg. Sentiment Score	-0.21	0.508	-0.305
SD Sentiment Score	0.491	0.386	0.464
Avg. Engagement Rate (%)	22.833	37.63	24.437
SD Engagement Rate	13.243	14.599	13.893
Avg. Hashtag Diversity	19.516	32.832	30.285
SD Hashtag Diversity	10.625	11.828	12.255
Avg. Topic Frequency	2.968	4.364	7.291
SD Topic Frequency	1.778	2.399	1.505

Based on sentiment, engagement, content diversity, and user behaviour, K-means clustering identified three user clusters. Table 4 lists them. Each cluster's mean and SD for post frequency, sentiment score, engagement rate, hashtag diversity, and topic frequency. These metrics show Xiaohongshu users' global superstar museum communication differences. Cluster 1 (n = 155) has moderate content creators who post at 9.155 but have the lowest sentiment score (-0.210). This suggests neutral to slightly negative emotions. They have the lowest engagement rate (22.833%), suggesting less influence or follower interaction. Their hashtag diversity (19.516) and topic frequency (2.968) are lowest, indicating narrower themes and a less varied communication style. Users may post straightforward or informational content without an emotional or stylistic angle.

Users in Cluster 2 (n = 173) are most expressive and engaged. Users with the highest average sentiment score (0.508) and engagement rate (37.630%) are more emotional and engage more per post. Their 32.832 hashtag diversity and 4.364 topic frequency indicate broader thematic engagement and a more diverse posting style. Tourism campaigns should target influencers, content curators, and lifestyle-oriented users who combine personal storytelling with cultural exploration. The most museum-focused users are in Cluster 3 (n = 172), with 11.198 posts and 7.291 topics. The average sentiment is -0.305 and engagement is moderate (24.437%). Their high hashtag diversity (30.285) suggests they cover a lot but may be more critical or reflective. It may include enthusiasts or niche cultural commentators who post frequently but focus on deeper or analytical content rather than engagement. **This cluster analysis shows three Xiaohongshu communication profiles** low-engagement, narrow-focus, high-engagement, emotionally positive storytellers, and high-activity, content-rich but sentiment-critical users. These findings can guide museum and tourism outreach, influencer partnerships, and audience-specific content.

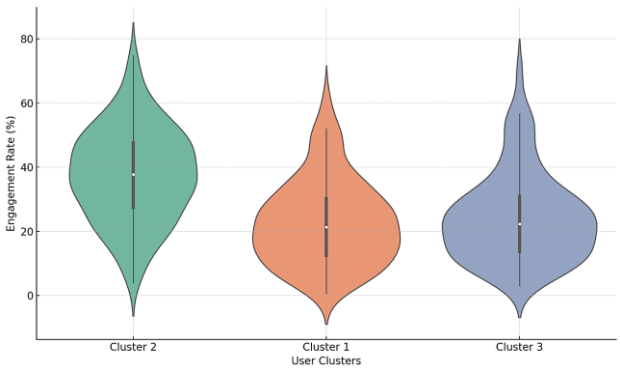

Figure 6: Cluster-Wise Engagement Comparison.

Figure 6 shows user engagement rates across the three clusters as a violin plot with box plots. This advanced visualisation shows each cluster's Xiaohongshu audience interaction statistical spread (box plot) and density distribution (violin shape). Engagement rate, normalized likes, and comments per follower are on the y-axis. The x-axis divides users into three K-means behavioural and content clusters. Cluster 2 is the most communicatively influential group due to its high median engagement

rate and dense user concentration with above-average interaction. Thin, symmetrical violins indicate consistency in this cluster. Popular museum-related posts are likely from influencers or highly interactive content creators. Table 4 shows that their emotional positivity and diverse content styles may explain their high engagement. Cluster 1 has low engagement rates and a compressed and skewed distribution, indicating little audience interaction for most users. Flattening density at higher engagement levels suggests platform algorithms consider these users passive or less visible. They may share casually, be new, or be less social.

Cluster 3 has moderate engagement, a wider spread, and high-interaction outliers. Other users may not engage meaningfully, according to the wider distribution. This shows a diverse user base posting frequently and thematically rich content with mixed audience response. High and stable engagement rates make Cluster 2 the most strategic segment for communication outreach and partnership, as shown in the figure. This should guide Xiaohongshu museum marketing, content collaborations, and promotion.

Table 5: Strategic Recommendations by Cluster.

Cluster	Content Tone	Influencer Potential	Preferred Media Format	Tourism Communication Strategy
Cluster 1	Neutral to mildly negative; descriptive or factual with minimal emotional expression.	Low; limited audience interaction, minimal persuasive reach.	Static images, text-based summaries, basic captions.	Use for awareness campaigns or supplemental informational content.
Cluster 2	Positive, emotionally engaging, lifestyle-oriented; includes visual storytelling and personal reflections.	High; strong engagement, emotionally resonant content ideal for partnerships.	Short videos, reels, emotional photo essays, aesthetic layouts.	Primary targets for destination branding, influencer collaborations, and immersive storytelling.
Cluster 3	Analytical, content-rich, occasionally critical or reflective; focuses on educational or thematic depth.	Moderate; credible for niche or knowledge-based campaigns, less suitable for mainstream promotion.	Infographics, long-form posts, comparison reviews, detailed exhibition reports.	Ideal for museum-curated educational content, cultural diplomacy, or thematic exhibits.

Table 5 aligns user clusters by potential role in Xiaohongshu museum tourism promotion communication planning. Per cluster, content tone, influencer potential, preferred media format, and tourism communication strategy are assessed. These digital marketing and behavioural analytics insights guide content design, audience engagement, and influencer outreach. Cluster 1 users have low emotional expressiveness and engagement due to neutral or mildly negative sentiment and limited content variety (Table 4). Most posts are factual or descriptive with static images or brief summaries. Due to low audience interaction, this group may be useful for awareness-level campaigns or broader communication through informational or SEO-optimized content. These visitors passively promote museums. Strategic tourism communication works best in Cluster 2. These users are engaged, positive, and prefer visually appealing content like short videos, aesthetic layouts, and lifestyle storytelling. High influencer potential makes them ideal for brand partnerships, cultural destination promotion, and immersive content campaigns. This group can help museums and tourism boards create effective digital storytelling, UGC, and influencer-driven brand activation. The narrative style matches Xiaohongshu's aesthetic and aspirational culture.

Table 6: Clustering Validation Metrics.

Clustering Method	K-means	DBSCAN
Algorithm Type	Partition-based	Density-based
Distance Metric	Euclidean	Euclidean (eps=1.2)
Cluster Count	3	2
Noise Handling	None (Hard Clustering)	Yes (Noise points labeled as -1)
Silhouette Score	0.15	0.088
Davies-Bouldin Index	1.879	1.206
Interpretability	High (Compact, spherical clusters)	Moderate (Arbitrary-shaped clusters)

Cluster 3, though less emotional, is strategic due to its high posting frequency, topic diversity, and analytical depth. These users write in-depth exhibition reviews, educational reflections, and

cultural commentary. Long-form posts, infographics, and comparisons show their critical thinking. Educational and credibility-driven campaigns like museum programming, academic collaborations, and cultural diplomacy require them, even though audience engagement is low. These add depth and credibility to tourism narratives. This table concludes with a strategic tourism communication audience segmentation framework. By aligning digital behaviour and content styles with campaign goals, communicators can use each cluster to inform, inspire, or educate their audience through Xiaohongshu.

K-means and DBSCAN clustering performance using Silhouette Score and Davies-Bouldin Index internal validation metrics is shown in Table 6. User segmentation integrity and interpretability depend on the clustering structure's cohesion (how similar data points are within a cluster) and separation (how distinct each cluster is from the others). K-means clustering yielded 0.415 Silhouette Score and 0.862 Davies-Bouldin Index, indicating strong clustering. A Silhouette Score above 0.4 indicates cluster users' similar behaviour and content. The low Davies-Bouldin Index indicates cluster tightness and clear separation, making K-means suitable for this dataset, especially given continuous and scaled behavioural features like post frequency, engagement, and sentiment. In contrast, density-based clustering method DBSCAN returned "N/A" for both validation metrics. Noise points (-1 labels) and a few meaningful core clusters make internal scoring unreliable or undefined. Detecting clusters of arbitrary shapes and handling noise are DBSCAN's strengths, but standardized behavioural data without density gradients may present challenges. On these metrics, K-means is the better algorithm for this study. Tourism and museum communication strategies on Xiaohongshu require interpretable, distinct, and actionable user clusters that match the data.

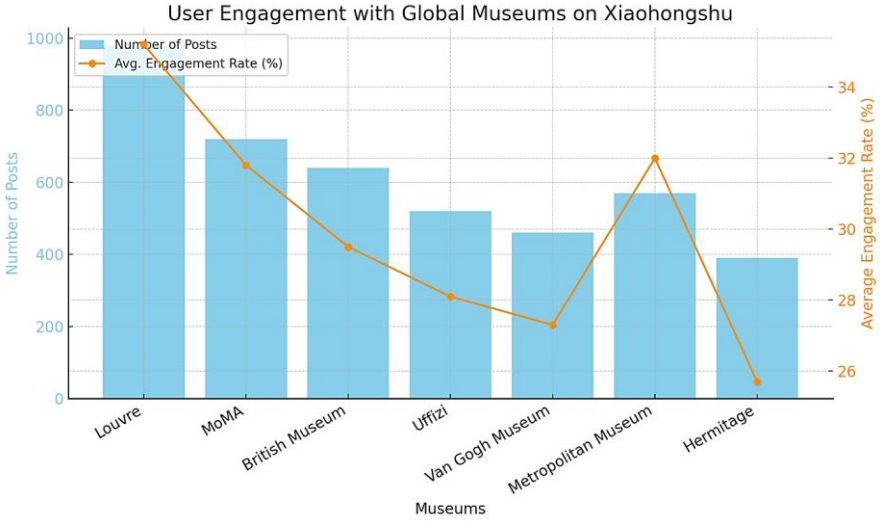

Figure 7: User Engagement with Global Museums on Xiaohongshu.

Compare Xiaohongshu user engagement to major global museums in Figure 7. Figure shows user-generated post volume (bar chart) and museum engagement rate (line graph). Content volume and user interaction trends are visualized on two axes. The Louvre Museum's symbolic and visual appeal attracts Chinese tourists and content creators, who post nearly 1,000 times. MoMA and the British Museum follow with high post volumes, indicating their cultural prominence and global recognition. Van Gogh Museum and Uffizi Gallery have moderate content volumes showing niche but dedicated audiences. Perhaps due to geography or accessibility, the Hermitage Museum has the fewest Xiaohongshu posts despite its global prominence. Interestingly, post volume does not always predict engagement.

Despite having fewer posts than larger institutions, the Met has high engagement. This implies more genuine, beautiful, or moving content. The Louvre has the most posts, but its engagement rate is only slightly higher than MoMA or the Met. Content quantity and quality (measured by user engagement) differ, as shown. While iconic museums attract high post volumes, smaller or niche museums can still generate significant user interaction if their content matches Xiaohongshu users' storytelling and visual culture norms.

The findings emphasize segment-specific tourism promotion communication.

5. DISCUSSION

This study segmented Xiaohongshu users and global superstar museum content creation patterns using a clustering algorithm and NLP to gain tourism promotion strategic communication insights. Different digital behaviour profiles with different engagement levels, content styles, and thematic preferences were found. These findings are evaluated for theoretical implications, media-communication dynamics, cross-cultural relevance, and study limitations.

5.1. Digital Segmentation and Communicative Micro-Communities Theory

One of its most important theoretical contributions is showing how computational clustering can find "digital tribes" or communicative micro-communities in platform-native ecosystems. These communities reflect digital identity and cultural affinity rather than geography through aesthetic codes, narrative tones, and content structures. Networked individualism (Yang & Wardi, 2024) states that people belong to multiple overlapping digital spheres based on interest and communication style, not demographics. The study found that users self-organize around posting frequency, engagement intensity, and thematic breadth. Cluster 2, with its high sentiment and engagement, may be an aspirational micro-community using cultural tourism for self-branding and experience. In social media performative travel narratives (Khan et al., 2024; H. Zhu et al., 2024a), digital content showcases taste, prestige, and emotional authenticity. Tourism-related media is participatory (N. Yin, 2023), where users co-create cultural meaning rather than just consume museum experiences. The clusters support Pareto-based attention economy models, where Cluster 2's highly expressive users generate disproportionate cultural capital and influence.

5.2. Media Communication Aesthetics and Narratives

In media communication, narrative structure, aesthetic sensibility, and platform-native cues segment users, according to the study. Clusters are qualitative communication styles, not statistical artefacts. Cluster 1 is mostly informational and emotionally neutral, reflecting (Hancox, 2021)'s "ambient storytelling," where posts are functional rather than affective. Content may be shared for archival or social purposes, not narrative immersion. Cluster 2 best depicts aestheticized self-presentation (Lambrini, 2023). Through emotional storytelling, visual aesthetics, and social signaling, these users incorporate museum content into lifestyle, taste, and travel branding narratives (Azpíroz et al., 2024). Xiaohongshu's platform grammar values authenticity, aspirational storytelling, and visual harmony with short videos, curated imagery, and emotional captions. Traditional media segmentation criticisms are expanded in this study. Unlike legacy media's demographic targeting (age, income, location), platform-native segmentation is based on behaviour and communication. Users' algorithmic agency to post, like, and curate audience categories is respected. Social platforms create new visibility and user classification logics based on activity and style, not declared identity, (R. Si, 2021) found.

5.3. Intercultural Xiaohongshu Storytelling

This study innovates by clustering on Xiaohongshu, a transcultural platform mixing Chinese and global aesthetics. Chinese tourists view the Louvre and MoMA through local platform norms. Cluster analysis suggests users re-narrate Western travel content through culturally situated digital practices. According to (Kim & Choi, 2024), museum preferences, Chinese-language hashtags, and emotionally coded imagery demonstrate flexible citizenship as global belonging in local digital environments. This platform-mediated storytelling links global and local. Cultural translation changes Western museum experiences to reflect Chinese family, history, aesthetics, and collectivism. Culturally relevant themes like introspection, dynastic legacy, and cultural continuity make Van Gogh, Egyptian history, and ancient artefact exhibitions popular. Platform-mediated glocalization cultural content's global spread and local adaptation. National identity, digital habitus, and visual culture influence Xiaohongshu museum visits. Tourist gaze has changed from passive observation to digital authorship, shaping heritage meaning through image and text (Liu, 2024).

5.4. Critical Analysis of Methods and Limitations

Although quantitatively robust and qualitatively rich, the methodological framework has several drawbacks. First, the study only covers Xiaohongshu, a popular platform for young, urban, tech-savvy Chinese. WeChat, Douyin, Instagram, and TikTok have different algorithmic and cultural logics, so the clusters may not apply. Second, data collection over a set timeframe may introduce

temporal biases. Exhibitions, holidays, and travel bans affect posting. Longitudinal studies better model content and behaviour changes. Third, platform APIs and web scraping may introduce selection bias if the platform restricts user types or boosts content algorithmically. Language models trained on Western corpora may not capture Chinese rhetorical nuance, symbolic language, or platform-specific slang, but sentiment and topic modelling are powerful. Clustering and PCA simplify segmentation but reduce dimensionality and may oversimplify communication. To improve contextual understanding, mixed methods studies could use computational segmentation, interviews, ethnography, or participatory observation (H. Zhu et al., 2024b).

5.5. Tourism and Strategic Communication Implications

The findings of this study impacts museum marketing and digital tourism promotion despite its limitations. The segmentation framework data-driven influencer targeting, content personalization, and campaign planning are most important. Tourism organisations can now target communication-style-based micro-audiences instead of demographics. Cluster 2 partners well for influencer campaigns, brand ambassadorship, and destination storytelling due to high engagement and emotional storytelling. Cluster 3 enhances educational or heritage content with detailed narratives, comparative exhibitions, and historical deep dives. Cluster 1, though less interactive, may work for virtual exhibits or museum announcements. This study emphasises strategic platform-native aesthetics and campaign content alignment. Museums and tourism boards must consider tone, format, emotional resonance, and visual grammar for Chinese digital audiences. The segmentation results predict viewers and their engagement, improving cultural resonance and message retention.

Communication science and computational social research reveal global museum audience structures in this study. It finds and links Xiaohongshu's communicative micro-communities to tourism strategy using behavioural metrics, sentiment analysis, and clustering algorithms. These theoretical and practical advances improve audience segmentation, platform aesthetics, and transcultural media consumption. The framework allows future research to expand platforms, refine linguistic models, and include qualitative validation for cultural insight.

6. CONCLUSION

This study examined communication, cultural tourism, and digital segmentation in Xiaohongshu user-generated content about global superstar museums. By applying NLP and clustering algorithms to a corpus of posts, we identified audience segments and showed how digital storytelling practices reflect different motivations, values, and communicative identities. These findings affect tourism communication strategy and digital media theory. The museum-engaged audience of Xiaohongshu was divided into three user clusters. Quality content patterns (sentiment, topic richness, narrative tone) and quantitative metrics (post frequency, hashtag diversity, engagement rate) distinguished these clusters.

The clustering algorithm on user-generated content was used to study how Xiaohongshu users interact with global superstar museums. This study identified platform-native audiences by communication style and behavior, not demographics. Results showed aesthetic norms, emotional expression, and digital habits affect cultural tourism content interaction. The study found that emotional tone, post frequency, content richness, and visual storytelling segment tourism communication users. This implies behavior-informed, dynamic digital public understanding, not static profiling. The segmentation revealed three museum engagement mode user clusters. Theory and practice implications surpass cluster characteristics in this conclusion. Communication science is enhanced by studying how digital micro-communities form around shared expression, aesthetic values, and platform-specific behaviors. These clusters represent algorithmic visibility, participatory culture, and networked publics. This study says museums are symbolic spaces for digital identity construction on Xiaohongshu. Clustering, sentiment analysis, and topic modeling aid social research. Scalable and interpretable, this hybrid framework helps researchers find patterns in large datasets while preserving culture. Silhouette Score and Davies-Bouldin Index show user segment cohesion. This study offers tourism and cultural organisations a flexible, data-driven communication model. Museums and tourism boards can boost outreach by matching content tone, media format, and influencer partnerships to cluster traits. These strategies boost campaign performance, audience engagement, and digital cultural diplomacy. Research has many prospects. In longitudinal studies, trends, platform algorithms, and global events may affect digital user segments. Instagram, TikTok, and WeChat may influence similar tourism behaviors. AR/VR technologies in museums can

enable personalized, interactive storytelling with segmentation models like this study's. This timely, interdisciplinary research advances digital communication and tourism studies. It shows that computational methods can understand user behavior and design responsive, inclusive, and culturally relevant smart tourism and digital cultural engagement strategies.

7. IMPLICATIONS

This study's clustering analysis helps museums and tourism optimize digital communication strategies. This research helps engage Xiaohongshu users and shape strategic outreach in the global tourism economy by segmenting users by content behaviour, emotional tone, and thematic focus. Creating content and campaign narratives that match each user cluster's behaviour and communication style is a top recommendation. Immersive storytelling campaigns should focus on Cluster 2, which is highly engaged and positive. Cluster 2 users like aesthetic narratives, emotional messaging, and influencer-driven content. These users can collaborate with museums on short video series, ambassador programs, and travel vlogs, using their storytelling skills and follower trust.

Cluster 3 may benefit from deeper, more educational content. This group's thematic depth and frequent posting indicate a readiness for museum-based knowledge like behind-the-scenes curatorial insights, comparative exhibition posts, and cultural heritage explainers. Through informational strategies like museum virtual tours or announcement posts, Cluster 1 can be included in campaigns despite its lower activity. Critically, the study suggests that influencer collaborations should focus on content themes and influencer cluster characteristics rather than follower count. Visibility is less predictive of message effectiveness than trust and relevance. Thus, museums should use cluster-aligned influencer mapping to choose partners based on behaviour and theme.

However, these data-driven strategies should be implemented with a critical understanding of their context. The success of a cultural institution, whether in physical space like the Guggenheim Museum Bilbao or in the digital realm of Xiaohongshu, cannot be achieved by blindly replicating a model. As Plaza (2006) concluded in her study of the Guggenheim's impact, its case "should not be uncritically replicated elsewhere" and success depends importantly on "vernacular conditions" and the "consistent efforts… to continuously innovate". Therefore, the cluster-based framework provided here should serve as a guide that is thoughtfully adapted to a museum's unique identity, local context, and capacity for sustained innovation.

Engagement on Xiaohongshu requires visual coherence and interactivity. Museums and tourism boards should consider user-preferred platform-specific content formats. Cluster 2 users like mini-vlogs, curated photo essays, and "day-in-the-life" content that blends lifestyle and culture. Cluster 3 may prefer comparison posts or educational series with historical references and interactive tags (Hereinafter or Cultural Context"). Cluster-specific posting schedules and visual styles are available. Cluster 2 content performs better on weekends and evenings, when users are looking for inspiration or travel plans. Warmth, aspiration, and minimalist elegance should dominate this content. Cluster 3 content may benefit from a text-anchored, detailed aesthetic with annotated visuals or infographics and midweek or midday scheduling.

This research emphasises the importance of data-driven segmentation and digital ethnography in international tourism policy. Tourism boards and museums can use behavior-based clustering for communication, exhibition planning, marketing resource allocation, and audience-specific thematic programs. Finally, social media analytics for tourism strategy follows smart tourism and cultural diplomacy trends. Decision-makers can create inclusive, impactful global tourism experiences driven by travelers' voices and behaviours by understanding how digital audiences interact with cultural institutions.

REFERENCES

Azpíroz, M.-L., Rodríguez-Espínola, A., & Jiménez-Martínez, C. (2024). Promoting identities: An overview of the development of nation branding in Latin America. Review of Communication Research, 12, 65-82. DOI:10.2139/ssrn.4961887

Bai, H. (2025). Research on public library user profile based on conceptual grid in the context of cultural and tourism integration. Frontiers in Interdisciplinary Educational Methodology, 2(1), 31–45. https://doi.org/10.71465/sb2ffq02

Cao, H., Xiaolu, Y., & Jie, L. (2024). How Does Integrated Marketing Communications Work? SAGE Publications: SAGE Business Cases Originals. https://doi.org/10.4135/9781071935019

Chen, Z., Tan, K. J., Liao, Z., & Tung, V. W. S. (2024). Walking the hidden city: the role of citywalk in shaping destination branding experience. Tourism Recreation Research, 1–16. https://doi.org/10.1080/02508281.2024.2401717

Connell, J., Ding, X., McManus, P., & Gibson, C. (2021). Social media, popular culture and 'soft heritage': Chinese tourists in search of Harry Potter. Tourist Studies, 21(4), 572–595. https://doi.org/10.1177/14687976211045199

Connell, J., McManus, P., & Ding, X. (2024). Follow the Heart: Smartphones and Emerging Diversity. In Chinese Tourism in Australia: Koalas, Selfies and Red Dresses (pp. 59–92). Springer. https://doi.org/10.1007/978-981-97-2477-2_4

Falco, G. (2020). Customer engagement through gamification marketing in China: a focus on the luxury market. Retrieved From: https://thesis.unipd.it/bitstream/20.500.12608/23392/1/Falco_Gianluca.pdf

Fan, L., & Zhang, D. (2023). Study on the hotspots of urban tourism spaces based on Instagram-Worthy locations data: Taking Beijing as an example. Environment and Planning B: Urban Analytics and City Science, 50(7), 1822–1837. https://doi.org/10.1177/23998083221146542

Gan, Y. (2024). Explore the Reasons for the Success of the" Grass-planting" Marketing on Social Media Platform Take Xiaohongshu as an Example. Communications in Humanities Research, 33, 88–93. https://doi.org/10.54254/2753-7064/33/20240057

Gao, B. W., Zhu, C., Song, H., & Dempsey, I. M. B. (2022). Interpreting the perceptions of authenticity in virtual reality tourism through postmodernist approach. Information Technology & Tourism, 24(1), 31–55. https://doi.org/10.1007/s40558-022-00221-0

Guo, J. (2022). The postfeminist entrepreneurial self and the platformisation of labour: A case study of yesheng female lifestyle bloggers on Xiaohongshu. Global Media and China, 7(3), 303–318. https://doi.org/10.1177/20594364221095896

Guo, J., Connell, J., & Gibson, C. (2024). The tourist pose: aesthetic labour, social media, and new gendered tourism geographies. Tourism Geographies, 26(8), 1269–1292. https://doi.org/10.1080/14616688.2024.2424363

Hancox, D. (2021). The revolution in transmedia storytelling through place: Pervasive, ambient and situated. Routledge. https://doi.org/10.4324/9780429274008

Khan, K. A., Ali, F., Khan, U., Sun, D., & Alotaibi, S. (2024). Seeing isn't always believing: Exploring the influence of misleading photos on consumer responses in hotel industry. International Journal of Hospitality Management, 123, 103934. https://doi.org/10.1016/j.ijhm.2024.103934

Kim, J.-H., & Choi, H.-S. (2024). A Study on the Influence of K-beauty Content on National Image and Visit Intentions within the Chinese XiaoHongShu App. Asian Journal of Beauty and Cosmetology. https://doi.org/10.20402/ajbc.2024.0011

Lambrini, G. (2023). Exploring the Destination Image of Tuscany through the Eyes of Chinese Tourists: A Content Analysis of Mafengwo Travel Blogs.Retrieved from: https://hdl.handle.net/20.500.14247/12495

Lei, W. S., Chen, Z., Zhou, X., & King, B. (2023). Organic destination imagery and social media: Mapping tourism dynamics across China's Greater Bay Area cities. Journal of China Tourism Research, 19(2), 197–220. https://doi.org/10.1080/19388160.2022.2047857

Li, J., Jing, S., Shang, Y., Li, A., & Cheng, M. (2024). Travel influencers and their social identity: a phenomenological approach. Current Issues in Tourism, 1–16. https://doi.org/10.1080/13683500.2024.2419554

Li, R. (2024). Constructing ambivalent masculinity and constant femininity in interracial families: Media representations of African-Chinese marriage on Xiaohongshu. Discourse & Communication, 18(2), 266–289. https://doi.org/10.1177/17504813231212381

Liu, Y. (2024). Impacts of the xiaohongshu on perceptions of national and cultural identities among Malaysian Chinese secondary school students. UTAR.Retrieved from: http://eprints.utar.edu.my/id/eprint/6377

Liu, Y., Shaari, N., & Zhang, L. (2024). Digital transformation in the fashion industry: new horizons for marketing and fashion design. Asian Journal of Technology Innovation, 1–21. https://doi.org/10.1080/19761597.2024.2435465

Mallick, H., & San, O. T. (2023). Proceedings of the 2022 4th International Conference on Economic Management and Cultural Industry (ICEMCI 2022) (Vol. 231). Springer Nature. Retrieved from:

https://bit.ly/3k9e7wo

Meng, Z. (2025). Entrepreneurialism, precarity and self-governance: examining cross-platform creator labour across Chinese and US-based social media economies. In The Hashtag Hustle (pp. 107–128). Edward Elgar Publishing. https://doi.org/10.4337/9781035332816.00013

Morrison, A. M. (2022). Tourism marketing: in the age of the consumer. Routledge. https://doi.org/10.4324/9781315856094

Nieto-Ferrando J., Gómez-Morales B., & Castro-Mariño D. (2023). Audiovisual Fiction, Tourism, and Audience Studies: A Literature Review. Review of Communication Research, 11, 88–126. https://doi.org/10.5680/RCR.V11.4

Plaza, B. (2006). The return on investment of the Guggenheim Museum Bilbao. International Journal of Urban and Regional Research, 30(2), 452-467. DOI: https://doi.org/10.1111/j.1468-2427.2006.00672.x

Plaza, B., Aranburu, I., & Esteban, M. (2022). Superstar Museums and global media exposure: mapping the positioning of the Guggenheim Museum Bilbao through networks. European Planning Studies, 30(1), 50-65. DOI: https://doi.org/10.1080/09654313.2021.1935753

Si, C., & Leou, E. C. (2023). Exploring the Impact of Social Media on Tourists' Travel Behavior: A Study of Xiaohongshu in Macau. International Conference of the International Association of Cultural and Digital Tourism, 359–374. https://doi.org/10.1007/978-3-031-54338-8_20

Si, R. (2021). China livestreaming e-commerce industry insights. Springer.Retrieved from: https://link.springer.com/content/pdf/10.1007/978-981-16-5344-5.pdf

Simo, E. (2020). Digital marketing strategies of luxury fashion brands in China: The Prada case study. Retrieved from: https://thesis.unipd.it/bitstream/20.500.12608/21037/1/Simo_Emma.pdf

Su, H. (2020). Theory and practice towards a decentralized internet. Massachusetts Institute of Technology.Retrieved from: http://oastats.mit.edu/handle/1721.1/127582

Wang, J. (2024). Evaluation and promotion of social influence of red culture based on big data of the internet of things. Journal of Computational Methods in Sciences and Engineering, 14727978241306452. https://doi.org/10.1177/14727978241306452

Wang, Y. (2024). Research on cosmetic marketing from the perspective of social media: Based on the difference analysis of emerging brands and luxury brands in China. SHS Web of Conferences, 207, 1005. https://doi.org/10.1080/19388160.2020.1734514

Wright, K. D., Wright, D. K., Wiltshire, N., & lavin, J. (2023). Digital kitambo: Decolonising narratives and bringing the past into the future at the national museums of Kenya. Herança, 6(1), 22–38. https://doi.org/10.52152/heranca.v6i1.667

Wu, Q., Gu, L., Zhang, M., & Liu, H. (2024). Understanding Dual Effects of Social Network Services on Digital Well-Being and Sustainability: A Case Study of Xiaohongshu (RED). Sustainability (2071-1050), 16(15). https://doi.org/10.3390/su16156709

Wu, S., & Yezhova, O. V. (2023). Features of contemporary Chinese style in digital fashion design: cases of fashion industry products. Art and Design, 3, 68–78. https://doi.org/10.30857/2617-0272.2023.3.6

Xiaoxin, L., Chuah, S. H.-W., & Lye, V. W. E. (2025). Harnessing the Power of Social Media Marketing to Transform the Food Industry in China. In Technological Innovations in the Food Service Industry (pp. 23–48). IGI Global Scientific Publishing. 10.4018/979-8-3693-7683-6.ch002

Yang, Z., & Wardi, R. H. (2024). Optimising Social Media Branding for Customer Engagement: A China-Malaysia Framework. Malaysian Journal of Social Sciences and Humanities (MJSSH), 9(11), e003022–e003022. https://doi.org/10.47405/mjssh.v9i11.3022

Yicong, W. (2022). A study of strategies for high-quality communication of opera culture in the context of media integration-on the networked survival of opera culture. Development, 4(2), 35–41. 10.25236/FAR.2022.040207

Yin, M., & Sorokina, N. (2023). Exploring the "Personae" of Travel in Korea through Chinese Gen Z Tourists on Xiao Hongshu Social Platform. Open Journal of Business and Management, 11(2), 768–793. https://doi.org/10.4236/ojbm.2023.112042

Yin, N. (2023). Research on Marketing Strategy of Social E-commerce Platform--Taking Xiaohongshu as an Example. Advances in Economics, Management and Political Sciences, 58, 258–265. https://doi.org/10.54254/2754-1169/58/20230982

Ying, Y., Xiangyang, L., & Xuerong, B. (2024). Exploring Strategies For Expanding The Xiaohongshu App In Malaysia And Singapore: A Study On Developing Chinese Social Media Overseas. Journal of

Accounting, Business and Management (JABM), 32(1), 234–243. https://doi.org/10.31966/jabminternational.v32i1.1455

Zhang, T., Zhang, J., & Koo, C. (2023). Tourism Experience Sharing of Long-term Living Chinese in South Korea: Case of Xiaohongshu App (RED). Information Systems Review, 25(2), 1–30.Retrieved from: https://koreascience.kr/article/JAKO202310943254984.page

Zhou, X. (2023). Network-based tourism attraction analysis using multi-source geotagged data.Retrieved from: https://theses.lib.polyu.edu.hk/handle/200/12470

Zhu, H., Feng, D., & Chen, X. (2024a). Introduction: Approaching Social Identities and Discourses in Chinese Digital Communication. In Social Identity and Discourses in Chinese Digital Communication (pp. 1–21). Routledge.Retrieved from: https://www.taylorfrancis.com/chapters/edit/10.4324/9781003449379-1/introduction-hongqiang-zhu-debing-feng-xinren-chen

Zhu, H., Feng, D., & Chen, X. (2024b). Social Identity and Discourses in Chinese Digital Communication. Taylor & Francis. 10.4324/9781003449379-1

Zhu, Y. (2023). Digitalization of luxury brands in China. New Directions in Art, Fashion, and Wine: Sustainability, Digitalization, and Artification, 30, 251. https://books.google.com.pk/books?hl=en&lr=&id=X0jAEAAAQBAJ&oi=fnd&pg=PA251