

Making regional culture legible in Nanjing Metro stations

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Abstract. Metro stations increasingly serve as sites of urban cultural representation, yet cultural media must share limited space and passenger attention with wayfinding and safety information. This study examines how regional culture can remain legible within that constraint. A theory-guided documentary comparison was conducted across seven Nanjing Metro cases using official documents, published studies, heritage listings, and traceable visual records available through June 2026. Site specificity and environmental legibility form the core framework. Visual social semiotics supports the analysis of representation, while servicescape and post-occupancy evaluation clarify service use and future verification. The comparison identifies three conditions for credible cultural expression. These are a verifiable relationship between theme and station, a clearly bounded set of semiotic resources, and placement that respects the passenger information hierarchy. Branded-station cases further show that service values acquire spatial meaning through accessible facilities and visible assistance, with labels serving a secondary role. The study contributes a focused framework for linking place, representation, and passenger movement while distinguishing documented practice from published interpretation and design proposal. Passenger outcomes remain subjects for field observation and post-occupancy evaluation, including recognition, orientation, accessibility, and maintenance performance.

Keywords: Nanjing Metro, regional culture, site specificity, environmental legibility, visual social semiotics

1. Introduction

Metro stations bring cultural representation into an environment organized first for movement, orientation, and safety. Cultural images, materials, and narratives can strengthen place identity, while route maps, directional signs, platform information, and emergency messages occupy the same visual field. The practical problem is one of coordination. Cultural expression must remain recognizable while preserving the information system on which passengers depend. Nanjing Metro has acknowledged this tension in formal planning. A 2022 response on Metro Line 6 called for thematic planning across the line while treating safety, evacuation, fire protection, spatial efficiency, and construction cost as central requirements [1].

This problem matters because metro stations expose residents and visitors to urban culture through repeated everyday use. Public art and environmental design can communicate regional identity through material, light, typography, and spatial organization [2]. Their effectiveness, however, depends less on the quantity of cultural content than on the clarity of its relationship to place and its position within passenger movement. A dense display may contain accurate cultural references and still remain difficult to interpret during travel.

Nanjing offers a demanding setting for this inquiry because several layers of urban history and civic identity converge within an expanding metro network. The city is associated with dynastic history, the city wall, Qinhuai customs, traditional craft, memorial culture, Republican-era architecture, and a mountain-and-water landscape. The opening of the Nanjing-Ma'anshan Line increased the operating network to 579 kilometers in 2026 [3]. The system has also developed branded stations, including Candy Station at Zhujiang Road, Fraternity Station at Nanjing South Railway Station, and Wen Shu Station at Confucius Temple [4]. These cases allow historical, place-based, and service-oriented forms of identity to be examined within the same transport system.

Recent scholarship increasingly treats metro cultural space as an integrated design problem. Reviews of Chinese metro public-space research note a shift toward interdisciplinary and evidence-oriented approaches [5]. Work on Jiangnan cultural elements emphasizes symbolic refinement, hierarchical organization, and coordination across spatial media [6]. Studies in Wuhan and Xi'an further demonstrate the value of multi-source evidence and formal evaluation [7, 8]. Even so, three issues remain insufficiently connected: the basis on which a theme belongs to a particular station, the way cultural media interact with passenger decision points, and the evidentiary limits of claims about design performance. Addressing these issues requires a framework that begins with place, follows representation into the movement environment, and separates documented practice from interpretation and proposal.

This study examines three questions. First, how can site specificity guide the selection and delimitation of cultural themes in Nanjing Metro stations? Second, how can semiotic resources be organized to support environmental legibility during movement and short stays? Third, how can cultural expression be coordinated with wayfinding, service facilities, maintenance, and subsequent evaluation? The study addresses these questions through a structured comparison of seven cases. Its contribution lies in treating site specificity as the prior condition for theme selection and environmental legibility as the principal criterion for coordinating cultural media with passenger use. Visual social semiotics provides the vocabulary for analyzing representation, while servicescape and post-occupancy evaluation are used only where service use and later performance assessment require them. Each claim is limited to the support available from official records, published interpretations, or documented place relationships.

2. Conceptual framework

2.1. Regional culture under transit constraints

Metro public art is often expected to communicate local identity and humanize standardized infrastructure. These aims meet a basic constraint. Regional culture carries layered historical meanings, whereas metro use depends on rapid recognition, predictable movement, and a controlled information load. A motif, historical account, or architectural reference may be accurate in isolation. When several such elements accumulate under a weak hierarchy, the station can become harder to interpret during travel.

A system-level perspective helps to address this constraint. Nanjing Metro planning links individual stations with line identity and the wider network [1]. Research on Jiangnan cultural elements likewise treats cultural content as a coordinated spatial system extending beyond an isolated wall treatment [6]. A broader review of metro public-space design calls for connections among human use, spatial form, and technical performance [5]. Together, these studies shift attention from decorative abundance to the organization of cultural meaning within everyday travel.

In this study, regional culture refers to historically and socially situated meanings associated with a place. These meanings may be expressed through built heritage, collective memory, customary practice, craft,

landscape, or documented civic identity. Contemporary service branding is treated as a related yet distinct form of place identity. This distinction permits branded stations to be examined while preserving the conceptual boundary between service initiatives and regional culture.

2.2. Site specificity and semiotic representation

Site specificity provides the first analytical criterion. Kwon argues that site-specific art derives meaning from its relationship with physical location, institutional setting, social identity, and public context [9]. A metro station is more than a neutral container for images. Its entrances, surrounding destinations, transfer role, passenger groups, management conditions, and civic function all shape the meaning of a cultural intervention.

Geographic proximity alone does not establish a convincing theme. The relationship is stronger when a station functions as a recognized gateway, official planning documents record the connection, or routine passenger use links the station closely to the cultural resource. A theme has weak specificity when it can be moved to several stations with little change in meaning. The first analytical question is therefore why a particular theme belongs at a particular station.

Visual social semiotics provides the vocabulary for examining how a place relationship is expressed. Image, composition, framing, typography, color, light, texture, and material acquire meaning through social convention and spatial arrangement [10]. A city-wall theme, for example, may be expressed through masonry proportion, gate silhouette, surface texture, and concise historical text. A Qinhuai theme may be conveyed through lantern structures, water rhythms, street scale, and warm light. The analytical issue is whether abstraction retains the formal and cultural features through which the theme remains recognizable.

Site specificity also sets a thematic boundary. A station surrounded by several attractions may still require one dominant focus, with supporting material kept within the same interpretive line. Additional historical detail can be placed where passengers can stop safely or accessed through optional digital media. This hierarchy preserves interpretive depth while preventing the station from becoming a compressed museum display.

2.3. Environmental legibility and passenger movement

Environmental legibility concerns the ease with which people recognize paths, edges, districts, nodes, and landmarks [11]. In a metro station, the relevant elements include entrances, ticketing areas, transfer corridors, platforms, exits, and destination information. Cultural media can contribute to legibility when they differentiate zones, reinforce routes, or mark decision points. Dense imagery, weak contrast, or uniform repetition across functionally different areas can instead reduce spatial clarity.

Wayfinding research shows that sign performance depends on the relationship among signage, floor-plan configuration, and decision points [12]. Cultural media therefore require a defined position within the information hierarchy. Route maps, platform numbers, directional signs, and emergency information need stable contrast and unobstructed visibility. Cultural content can frame or reinforce these elements when its visual language remains distinguishable from official signage and leaves immediate route choices clear.

The servicescape framework is used as a supporting perspective for branded-station cases. Physical surroundings shape the experience of users and employees within a service setting [13]. In a metro station, public-service values become tangible through accessible routes, help points, seating, lighting, staff interfaces, child-friendly facilities, and information design. A brand gains spatial credibility when passengers can encounter its stated values through use. Logos and slogans alone provide limited evidence of service quality.

2.4. Service use and post-occupancy evaluation

Cultural design also requires evaluation after a station opens. Materials age, signs are replaced, digital content changes, and passenger flows may differ from design expectations. Post-occupancy evaluation provides established methods for examining building performance through observation, user feedback, route tasks, accessibility audits, and maintenance records [14]. Relevant outcomes include theme recognition, route choice, hesitation at decision points, congestion near installations, accessibility, durability, and ease of content renewal.

The framework assigns different roles to these concepts. Site specificity and environmental legibility are the two core concepts: the first establishes why a theme belongs to a station, and the second examines how cultural media coexist with movement and transport information. Visual social semiotics supports the analysis of representation. Servicescape analysis is applied to branded-station cases, and post-occupancy evaluation defines the evidence required to test performance after implementation. Table 1 summarizes these roles.

Table 1. Concepts and their roles in the study

Concept	Role in the study	Guiding question	Theoretical source
Site specificity	Core criterion for theme selection	Why does this theme belong at this station?	Kwon [9]
Semiotic representation	Analytical vocabulary for visual and material expression	How is place meaning expressed through spatial media?	Kress and van Leeuwen [10]
Environmental legibility and wayfinding	Core criterion for coordination with passenger movement	Does cultural media support orientation or compete with it?	Lynch [11]; O'Neill [12]
Service environment	Supporting perspective for branded-station cases	Are stated values embodied in usable facilities?	Bitner [13]
Post-occupancy evaluation	Future verification of performance	How does the design perform after opening?	Preiser et al. [14]

Note: Site specificity and environmental legibility are the core concepts. The remaining perspectives support representation analysis, branded-station interpretation, or future evaluation.

3. Research design

3.1. Case selection and comparative logic

This study adopts a theory-guided documentary comparative case design. Case-study research is appropriate for examining a contemporary phenomenon in relation to its context and for combining several types of evidence [15]. The comparison follows a structured, focused procedure in which the same analytical questions are applied to every case [16]. The design supports systematic interpretation and maintains the scope of case-based inference.

Seven cases were selected. Confucius Temple and Sanshanjie form one paired case because their shared relationship with the Qinhuai district makes thematic differentiation especially visible. The remaining cases are Zhonghuamen, Gulou, Muxuyuan, Zhujiang Road, Nanjing South Railway Station, and Yunjinlu. Each case met three criteria: a defensible relationship with a regional cultural resource or documented service

theme, sufficient public evidence for analysis, and variation in the type of place identity represented. The sample therefore includes historical memory, customary culture, traditional craft, landscape, memorial culture, gateway identity, and service branding.

The unit of analysis is the relationship linking the station and its place basis to the assigned theme, the semiotic resources used or proposed, their position within the information system, and their connection with service and maintenance. This relational unit keeps the interpretation of an image or motif tied to the station in which it appears or is proposed.

3.2. Evidence sources and inclusion criteria

The evidence corpus consists of official government and metro documents, formally published studies, heritage listings, and traceable visual documentation contained in those sources. Materials available through 30 June 2026 were considered. Inclusion required a verifiable origin, a clear date, and direct relevance to a case or analytical concept. Only images with identifiable sources formed part of the factual basis of claims.

Each source type served a distinct evidentiary purpose. Official documents verified station identities, network information, access relationships, branded-station initiatives, and documented thematic projects. Published research supplied theoretical concepts and, where available, interpretations of particular artworks. Heritage listings confirmed the status of Nanjing Yunjin brocade. An official record could establish that a project existed, while a published study could support an interpretation of its visual content. Passenger recognition and behavior remain questions for field data.

Table 2 records the place relationship, available evidence, and analytical basis for each case. It forms part of the audit trail by distinguishing descriptions grounded in official or published evidence from proposals derived from a documented relationship between station and place.

Table 2. Cases, place relationships, and evidentiary basis

Case	Relationship to place	Available evidence	Analytical basis
Confucius Temple and Sanshanjie	Qinhuai customs, literary and examination history, and street life	Official branding at Confucius Temple; uneven evidence for detailed spatial media	Officially documented branding and interpretation derived from the documented place relationship
Zhonghuamen	Ming city wall and southern urban threshold	Strong relationship to place; passenger effects await field study	Design analysis derived from the documented place relationship
Gulou	Historic civic center and major transport node	Clear urban role; evidence for a current cultural-media system remains limited	Design analysis derived from the documented place relationship
Muxuyuan	Metro access to Ming Xiaoling and the Zhongshan Mountain scenic area	Official access relationship; evidence of a completed Ming Xiaoling-themed station remains unavailable	Design proposal derived from the officially documented access relationship

Table 2. Continued

Zhujiang Road	Republican-era visual memory and Candy Station identity	Published mural interpretation and official brand documentation	Published interpretation and officially documented service practice
Nanjing South Railway Station	Metropolitan gateway and Fraternity Station identity	Official brand documentation; passenger response awaits field study	Officially documented service practice
Yunjinlu	Memorial district and peace theme	Official response documenting a peace-themed station initiative	Officially documented thematic initiative

Note: Entries based on place relationships are presented as analytical proposals. Completed interventions and passenger effects require separate evidence.

3.3. Coding and cross-case comparison

A deductive coding frame was developed from Table 1. Each case was examined through five analytical dimensions: place relationship and thematic boundary, semiotic representation, environmental legibility and wayfinding, service integration where relevant, and maintenance or evaluation needs. A separate evidentiary descriptor recorded whether a statement rested on official documentation, published interpretation, or a design proposal derived from the place relationship. This descriptor clarified claim scope and was not treated as a quantitative measure.

The analysis proceeded in two stages. The within-case stage traced the connection from place basis to thematic implication and then examined representation, information hierarchy, service use, and evaluation needs. The cross-case stage identified recurring patterns, contrasts, and boundary cases. Muxuyuan and Gulou were retained because their limited evidence clarifies what can reasonably be inferred from location alone. Whenever a source supported only a narrow conclusion, the wording of the claim was narrowed accordingly.

The analysis was completed by one author, so an inter-coder reliability statistic is unavailable. Rigor was supported through a common codebook, a case-by-variable matrix, explicit source attribution, repeated verification of station names, and a written record of the basis for each claim. These procedures strengthen transparency, while single-author interpretation remains a limitation.

3.4. Scope and methodological rigor

The study examines design logic and evidentiary support. Passenger recognition, emotional response, comfort, route accuracy, travel time, and behavioral change require primary research. Source coverage varies across cases, making a composite numerical index more precise than the available evidence permits.

The method was selected for its fit with the research questions and the available documentary corpus. Structured comparison, a transparent audit trail, and explicit claim boundaries are more appropriate than technical complexity for its own sake. Eye tracking, route experiments, surveys, and multivariate models would become relevant only after primary passenger data were collected.

4. Findings

4.1. Site specificity and theme selection

The cross-case comparison shows that theme selection becomes credible only when the relationship between station and place is specific enough to set a boundary. Confucius Temple and Sanshanjie both serve the Qinhuai area, yet their local roles differ. Confucius Temple can foreground literary, educational, and ritual associations linked to the temple complex and imperial-examination history. Sanshanjie can emphasize street life, market memory, and movement toward the wider Qinhuai district. Treating the two stations as interchangeable tourist gateways would erase the distinction that gives each theme local meaning.

Zhonghuamen has a direct relationship with the Ming city wall and the southern urban threshold. This relationship supports a theme organized around fortification form, masonry, gate proportion, and movement through an entrance landscape. Gulou, by contrast, combines a historic civic center with a major transport node. Its cultural treatment must clarify central-city identity while preserving interchange information. A general collection of historical images would add content yet leave the node's specific significance underexplained.

Muxuyuan demonstrates why accurate station identification must precede interpretation. Official visitor guidance identifies it as a principal metro access point for Ming Xiaoling and the Zhongshan Mountain scenic area [17]. The documented access relationship supports landscape- and heritage-oriented proposals, but it does not establish the existence of a completed Ming Xiaoling-themed station. Separating these claims permits design analysis without converting proximity into evidence of an existing intervention.

Yunjinlu provides stronger project evidence. An official response records cooperation to develop a peace-themed station because of its relationship with the memorial district [18]. Here, the thematic basis is institutional and commemorative as well as geographic. The case shows that documented civic purpose and collective memory can establish site specificity alongside architectural proximity.

4.2. Semiotic restraint and thematic coherence

A clear relationship to place still requires a bounded visual argument. Qinhuai culture includes lanterns, water, boats, street facades, literary references, and examination history. Bringing every element into one setting would fragment the theme. A more coherent arrangement assigns each resource a specific spatial role while keeping the elements within one interpretive line. Light and translucent materials can shape the concourse atmosphere, water-related rhythms can accompany corridor movement, and concise text can explain an unfamiliar reference where passengers can stop safely.

Zhonghuamen illustrates how architectural resources can reduce reliance on narrative display. Brick proportion, masonry texture, restrained color, and gate silhouette can establish identity through form and can be integrated into walls, thresholds, and transitions between zones. Long chronological panels would require more time and attention than most passengers can provide while moving.

Traditional craft presents a further test of thematic restraint. Nanjing Yunjin brocade is listed in China's national intangible cultural heritage system and on *UNESCO's Representative List* [19, 20]. Its relevance to spatial design lies in weave structure, rhythm, density, color relationships, and material character. Enlarging a dense pattern without adaptation can reduce the craft to surface decoration. Careful abstraction preserves the compositional order through which the tradition remains recognizable.

Zhujiang Road carries two distinct narratives. A published study interprets its Republican-era mural through historic photographs and bronze relief [21], while official documents identify Candy Station as a later

service brand [4]. The two narratives require separate visual and spatial roles. Placing them on the same surfaces or at the same decision points would make their meanings compete.

4.3. Cultural media within the information hierarchy

Across the cases, cultural media are most compatible with passenger use when they reinforce spatial differentiation. A distinctive material field in a concourse, a recognizable ceiling rhythm along a transfer route, or a landmark artwork near an exit can help identify location. The same feature becomes disruptive when it reduces the contrast of route maps, obscures directional signs, or encourages stopping in a narrow passage.

Placement should follow the sequence of passenger decisions. Entrances and ticketing areas require immediate orientation. Junctions and transfer points need clearly visible arrows, line numbers, and destination information. Platforms permit brief periods of waiting, although signs, warnings, and train information remain primary. Longer interpretation is better placed in wider concourses, waiting areas, or optional digital interfaces.

Repetition requires spatial variation. A thematic family can create continuity across a station or line, while changes in material, scale, or form can mark changes in spatial function. The theme then contributes to environmental legibility and avoids visual uniformity.

4.4. Service identity through spatial use

The branded-station cases show that service identity becomes credible through use. At Candy Station, a child-friendly identity can be expressed through visible assistance, accessible routes, and facilities for children and caregivers. At Fraternity Station, accessible seating, help points, staff interfaces, and clear information give the theme a practical form. Official sources confirm the existence of both brands [4], while their effects on passenger experience remain questions for field research.

Service branding is distinct from historical culture but can still contribute to place identity when it responds to the station's users and civic role. A brand carried mainly by slogans or decorative graphics has little spatial substance. The servicescape perspective shifts attention from the publicity label to the facilities and service encounters through which the brand is used.

4.5. Evidentiary boundaries

The comparison shows that evidence strength determines claim scope. Yunjinlu supports discussion of a documented thematic initiative because an official source identifies the project. Zhujiang Road supports a published interpretation of a mural and a separately documented service brand. Muxuyuan supports a proposal derived from its officially recorded access relationship, while evidence of a completed heritage-themed station remains unavailable. Gulou and Zhonghuamen likewise support place-based design analysis, while passenger-effect evaluation awaits field evidence.

The distinction also determines how each case is written. A claim supported by official documentation can be stated directly. An interpretation from prior scholarship must remain attributed to its source. A proposal derived from a place relationship requires conditional wording and an explicit statement of its analytical status. Table 3 summarizes the design implications and principal risks under these evidentiary conditions.

Table 3. Case implications and evidentiary risks

Case	Design implication	Principal risk
Confucius Temple and Sanshanjie	Differentiate literary, examination, street, and market associations while preserving their shared Qinhuai relationship.	Competing tourist images and repeated motifs
Zhonghuamen	Use masonry proportion, texture, and gate form as architectural and orientation cues.	Historical text accumulating into a museum-like display
Gulou	Coordinate civic-center identity with interchange information and spatial hierarchy.	Decorative graphics weakening transport information
Muxuyuan	Connect landscape cues with movement toward the scenic area and destination guidance.	Treating access proximity as evidence of an existing themed station
Zhujiang Road	Establish a clear hierarchy between the Republican-era mural and child-friendly service information.	Competition between two distinct narratives
Nanjing South Railway Station	Express fraternity through accessibility, assistance, seating, and service interfaces.	Brand language detached from service use
Yunjinlu	Use restrained material, light, imagery, and text to support solemn public memory.	Atmospheric treatment obscuring mandatory signs

5. Discussion

5.1. Site specificity and environmental legibility

The findings support a theoretical sequence in which site specificity precedes representation and evaluation. A station theme first requires a defensible relationship with place, civic function, or documented public purpose. Visual and material treatment can then develop within the boundary set by that relationship. When this prior condition is weak, a culturally accurate motif may still appear arbitrary because its connection with the station remains unclear.

This sequence adds a place-based criterion to recent research on metro cultural space. Studies in Wuhan and Xi'an have advanced multi-source analysis and formal evaluation [7, 8]. The Nanjing comparison indicates that these methods should be preceded by verification of the relationship between a proposed theme and the station to which it is assigned. Formal evaluation then assesses performance after the place logic has been established.

Environmental legibility provides the criterion that connects cultural meaning with transport use. Public art, architecture, and signage share the same visual field, so their scale, contrast, position, and repetition jointly influence how passengers identify routes and exits. Evaluation must extend beyond symbolic richness or visual attractiveness to examine whether cultural media clarify or compete with spatial information, especially in gateway and interchange stations.

The branded cases extend this argument from representation to public use. Service values gain spatial meaning through accessible and usable interfaces, which is consistent with the servicescape framework [13]. The same principle applies: a label becomes credible only when passengers can encounter its meaning through

the environment. Official documentation can establish the existence of a branded station, while comfort, trust, and satisfaction require passenger data.

5.2. Design and operational implications

For design practice, the framework suggests a staged process. The first stage maps the station surroundings, civic role, passenger groups, and documented cultural resources. The dominant theme then sets the boundary for selecting relevant references. The chosen semiotic resources are assessed at the scale and location in which passengers will encounter them. Cultural media are then coordinated with architecture, wayfinding, lighting, accessibility, service facilities, and maintenance.

The process can operate at both line and station levels. Neighboring stations may share a broad cultural district while retaining different focal themes. Shared material or compositional principles can create continuity, while each station preserves a distinct motif. This balance supports line identity and maintains station-specific distinction.

Historical explanation remains useful when it is placed according to passenger attention. Concise labels can clarify unfamiliar references near artworks. Longer narratives are better suited to wide concourses, waiting areas, or optional digital interfaces. Digital content should supplement the spatial experience and should not become the only accessible form of interpretation. Mandatory transport information requires consistent contrast, size, and placement across all media.

Operational planning should begin during design. Surface durability, cleaning, replacement, access to lighting, copyright ownership, and responsibility for content updates all affect the long-term legibility of a cultural feature. Service themes also require staff procedures and regular review. These concerns accord with the broader public-space principle that design quality depends on support for actual human activity [22].

5.3. Post-occupancy evaluation and transferability

The framework can guide post-occupancy evaluation after a station opens. Brief intercept interviews or image-based tasks can examine theme recognition. Route choices, errors, hesitation, and time spent at decision points can reveal wayfinding performance. Observation can identify congestion near artworks and conflicts between stopping and circulation. Accessibility audits and maintenance records can show whether the design remains usable for different passenger groups.

Emotional response also requires direct measurement. Documentary evidence can identify an intended atmosphere created through color, light, and material, while field data are required to establish its effects. Research on emotional atmosphere in metro public space provides a relevant direction [23]. Future studies may combine behavioral observation, interviews, eye tracking, and maintenance data when the research question and site access justify them. Methodological complexity should follow a defined evidentiary need.

The analytical questions can be transferred across cities, although each visual solution remains site-specific. Cities differ in history, network scale, passenger patterns, and institutional arrangements. Craft, memorial culture, landscape, tourism, and service identity also carry different weight across locations. Transferability therefore lies in the questions and evidence rules, not in the replication of a visual formula.

5.4. Limitations and future research

The evidence base is limited to public documents, published studies, heritage listings, and traceable visual documentation. Source coverage varies across cases, so the study provides a selective account of the available station art and design records. Some cases support direct description of documented practice, while others

support analytical proposals derived from place relationships. Explicit wording reduces overstatement, while missing primary records remain a limitation.

The study treats passenger experience as a design requirement, with outcome measurement reserved for field research. Claims about recognition, comfort, emotion, route accuracy, and behavioral change require direct observation or participant data. The single-author analysis relies on a codebook and audit trail for interpretive consistency, while independent coding would provide a stronger check. The focus on one city also limits transferability. Comparative research across metro systems can test the framework under different cultural and operational conditions.

6. Conclusion

Regional culture becomes legible in a metro station when theme selection, representation, and passenger use are treated as one connected problem. The Nanjing cases show that a theme first requires a verifiable relationship with place, civic function, or documented service history. Its meaning can then be expressed through a bounded set of semiotic resources positioned in relation to architecture, passenger movement, information priority, and service use. Maintenance and evaluation determine whether this relationship remains effective after opening.

The findings answer the three research questions within the limits of the available evidence. Site specificity guides theme selection and thematic boundaries. Visual social semiotics supports the analysis of image, material, text, and composition. Environmental legibility and wayfinding coordinate cultural media with passenger decisions, while servicescape analysis clarifies how service values become visible through facilities. The comparison also shows that the scope of a claim must follow its evidentiary basis. Future observation and post-occupancy evaluation should examine theme recognition, orientation, accessibility, and maintenance performance under actual travel conditions.

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