*Research Paper*

# Inclusive cultural access and complex-based integration

## A mixed-method comparative case study of embedded reading spaces in Shanghai

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**Abstract**

*Amid increasing urban mobility, time fragmentation, and lifestyle diversification, there is increasing demand for cultural spaces that are flexible and easy to access. This study focuses on embedded reading spaces—libraries or bookstores integrated within, but not limited to community centers, recreational venues, and commercial facilities—as a strategy to increase cultural accessibility. Although spatial and functional integration has received growing attention in cultural planning, comparative evaluations of integration strategies remain limited, particularly from user-centered perspectives. This study looks at the effects of different integration modes on inclusive cultural access. In Shanghai, eight embedded reading space cases across three subdistricts were selected and classified in three types according to their embedding venues. (1) Neighborhood libraries embedded within community service centers represent a low level of integration, characterized by internal public-service-oriented integration and relatively limited functional complexity. (2) Large-scale libraries integrated into parks or open scenic areas introduce leisure-oriented use contexts, reflecting a medium level of integration with increased functional complexity. (3) Reading spaces embedded in commercial complexes exhibit a high level of integration, marked by a significant enhancement of functional complexity. These three types form a spectrum of differentiated integration levels, offering a comparative structure for examining their variations in spatial performance, user behavior, and user appeal. A mixed-method approach was applied, combining behavioral mapping, surveys, and semi-structured interviews. The findings show that the three types follow distinct integration strategies, ranging from service co-location to experiential synergy and path-based alignment. Among them, reading spaces embedded in commercial complexes appear to offer the strongest advantages in reaching more users, raising awareness, and helping plan trips and use time more efficiently. Overall, the study suggests that complex-based integration can serve as a useful way to promote inclusive cultural access. This study helps advance the understanding of cultural accessibility and contribute suggestions for cultural planning in high-density cities, notably by pointing out the potential of commercial complexes—as representative mixed-use developments—to serve as viable cultural anchors in inclusive urban transformation.*

**Keywords**

*Cultural Accessibility, Reading Spaces, Commercial Complexes*

## 1. Introduction

Since the adoption of UN-Habitat III and the New Urban Agenda, sustainable urban development has increasingly aimed to promote inclusivity and social justice. Researchers and planners have focused on the concept of the "15-minute city," which has attracted attention as a key spatial strategy to support an inclusive form of urban living (Kim, 2014). In practice, this concept translates ideals of equity into physical proximity, taking both distance and time into account (Pozoukidou and Chatziyiannaki, 2021). It is worth noting, however, that inclusion depends not only on the ability to reach but also on people's willingness and capacity to participate (Páez et al., 2012), particularly in the cultural domain. Taking this insight as a starting point, we look at spatially and functionally integrated projects to better understand "cultural accessibility" beyond simple physical proximity.

In urban studies, accessibility is widely regarded as a central concept and has been approached from multiple perspectives, including the effort or cost of travel (Ingram, 1971), the number of reachable opportunities (Wachs and Kumagai, 1973), and the potential for interaction (Hansen, 1959). This conceptual diversity suggests that accessibility is not limited to physical proximity, but rather concerns how people choose, move, and interact with urban environments as a process (Geurs and van Wee, 2004). Empirical studies further indicate that, compared with static neighborhood-based delineations, dynamic characteristics such as travel routes and temporal rhythms often lead to deviations in actual activity spaces, which may be either compressed (Kwan, 1999; Ren et al., 2014) or expanded (Kwan, 2012). However, research remains limited on how spatial mechanisms can be used to address such deviations by mitigating or leveraging them to improve accessibility. Against this backdrop, this study focuses on spatial and functional integration as a mechanism for enhancing accessibility, exploring how the co-location and configuration of urban functions influence use and participation.

Amid the declining availability of developable urban land and the growing demand for public services, many cities have adopted spatial and functional integration as a strategy to deliver public facilities more efficiently. Cultural, sports, healthcare, leisure, and commercial functions are increasingly co-located within shared venues (Snedcof, 1985; Chia, 2001; Mualam et al., 2019). As urban mobility intensifies and daily rhythms accelerate, such integration also brings public services into closer alignment with residents' everyday activities, offering more flexible, attractive, and inclusive modes of engagement. This strategy is particularly significant in the cultural domain. Unlike essential infrastructure such as healthcare or transport, culture is not a necessity for survival, yet it plays a central role in identity formation, creative expression, and social connection. Cultural participation is largely voluntary and is highly shaped by cognition, emotion, and meaning (Jancovich, 2017). Therefore, creating spaces that can actively inspire diverse groups to use, express, and interact is crucial for achieving inclusive cultural development.

With the continued development of integration practices in public cultural spaces, varying degrees of spatial integration and functional diversity have emerged, ranging from relatively simple configurations to highly composite forms (Kim, 2014). Different modes of integration may influence cultural accessibility and inclusive participation through distinct mechanisms, yet systematic comparative studies remain relatively scarce. To address this gap, this study compares practices with different levels of spatial and functional integration, examining how integration strategies shape patterns of use, identifying internal differences among cases, and thereby exploring their potential roles in supporting inclusive cultural participation.

To this end, this study takes Shanghai as the empirical context and selects *embedded reading spaces*—libraries or bookstores integrated within, but not limited to, community centers, recreational venues, and commercial facilities—as the objects of analysis. In recent years, public cultural space integration practices

in Shanghai, represented by embedded reading spaces, have developed rapidly, giving rise to multiple integration modes and a substantial number of representative cases, thus providing ideal conditions for comparative research. Eight embedded reading space cases were selected and examined through a mixed-method comparative framework that combines behavioral mapping, user surveys, and semi-structured interviews, in order to analyze their performance and differences across multiple dimensions of use. This study aims to understand the practical performance and internal variations of different integration strategies from the user perspective, deepen insights into inclusive cultural access, and provide practical implications for the development of new forms of public cultural spaces in high-density urban environments.

## 2. Methodology

### 2.1. Research Design and Case Selection

The study first conducted a citywide mapping of libraries and bookstores in Shanghai, followed by a pilot field investigation to identify representative cases suitable for comparison. To ensure the validity of the research design, case selection followed a two-layer comparative logic.

(1) **Within-subdistrict comparison**: within each subdistrict, multiple cases located in close spatial proximity but embedded in different types of venues were selected in order to control, as far as possible, for external variables such as population structure, local development conditions, and transport accessibility, while highlighting differences in integration modes.

(2) **Cross-subdistrict validation**: the same comparative structure was replicated across different central-city subdistricts, forming multiple parallel comparisons to test the consistency of findings and to identify potential contextual variations.

Eight embedded reading space cases were selected across three central Shanghai subdistricts (Jiaxing Road, Xujiahui, and Daning Road). These cases can be classified into three types according to their embedding venues, forming a spectrum of spatial and functional integration with increasing levels of complexity.

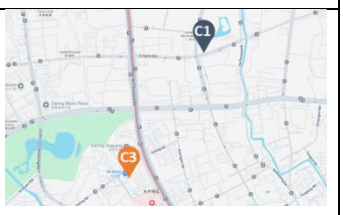
(1) **Type 1** refers to neighborhood libraries embedded within community service centers, where they are co-located with government-provided administrative, cultural, and sports services. These functions share similar institutional origins and usage logics, resulting in a low degree of integration characterized by internal public-service-oriented integration and relatively limited functional complexity.

(2) **Type 2** includes large-scale libraries integrated into parks or open scenic areas. Beyond cultural services, these settings introduce leisure-oriented use contexts, reflecting a medium degree of integration with increased functional complexity.

(3) **Type 3** consists of reading spaces embedded in commercial complexes, situated within high-intensity environments that combine consumption, leisure, and social activities. These cases exhibit a high degree of integration, marked by the overlay of multiple use scenarios and a significantly enhanced level of functional complexity.

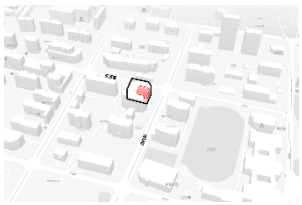
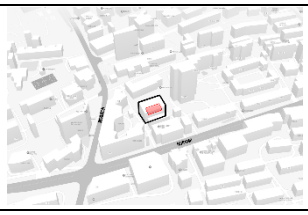
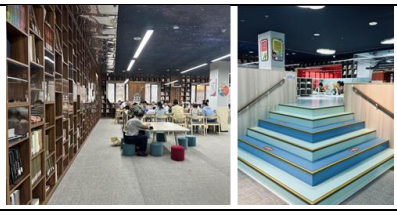
Cases are labeled using subdistrict letter and type number (A1–A3, B1–B3, C1, C3), with basic information summarized in Table 1 and spatial configurations in Tables 2–4. The cases inevitably differ in many respects beyond their integration modes. Rather than statistically isolating these contextual differences, the study adopts a structured comparative approach: patterns that consistently appear across subdistricts are attributed to integration modes, while deviations are interpreted in light of other contextual factors.

**Table 1. Basic Information of the Study Cases. Source: Authors.**

| ID | Name | Area ($m^2$) | Year | Entity | Functional Context | Metro Access | Location Map and Subdistrict Service Capacity |
|---|---|---|---|---|---|---|---|
| A1 | Jiaxing Road Subdistrict Library (at Jiaxing Road Subdistrict Party-Masses Center) | 500 | 2020 | Gov | Res: Close / Bus: Close | 800 m |   Subdistrict A (Jiaxing Rd, Hongkou) – Medium service capacity |
| A2 | Heping Library (at Heping Park) | 2170 | 2024 | Gov | Res: Close / Bus: Distant | 350 m | |
| A3 | Sisyphe Books (at Ruihong Tiandi Sun Palace) | 610 | 2021 | Market | Res: Close / Bus: Close | Direct Access | |
| B1 | Xujiahui Subdistrict Library (at Xujiahui Community Cultural Activity Center) | 530 | 2022 | Gov | Res: Close / Bus: Close | 700 m |   Subdistrict B (Xujiahui, Xuhui) – High service capacity |
| B2 | Zikawei Library (at Xujiahui Scenic Area) | 18650 | 2023 | Gov | Res: Distant / Bus: Close | Direct Access | |
| B3 | Popular Bookmall (at Metro-City) | 900 | 2013 | Market | Res: Distant / Bus: Close | Direct Access | |
| C1 | Ning's Study Room (at Daning Road Subdistrict Party-Masses Center) | 790 | 2023 | Gov | Res: Close / Bus: Close | 1100 m |   Subdistrict C (Daning Rd, Jing'an) – Medium service capacity |
| C3 | Ning's Study Room (at Daning International Commercial Plaza) | 340 | 2019 | Gov | Res: Close / Bus: Close | 500 m | |

Note: Gov = government-operated; Market = market-based; Res = residential use; Bus = business use; Close = within close proximity; Distant = relatively distant. Subdistrict service capacity represents whether a subdistrict functions as a higher-level activity center capable of attracting a broader range of users, based on field observation and Baidu heatmap analysis.

**Table 2. Type 1 Cases. Source: Online images for embedding venues; authors' own drawings and photographs for others.**

| ID | Site Axonometric Diagram | Embedding Venues | Embedded Reading spaces |
|---|---|---|---|
| A1 |  |  |  |
| B1 |  |  |  |

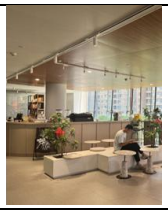
| | | | | |
|---|---|---|---|---|
| C1 |  |  |  |  |

**Table 3. Type 2 Cases. Source: Online images for embedding venues; authors' own drawings and photographs for others.**

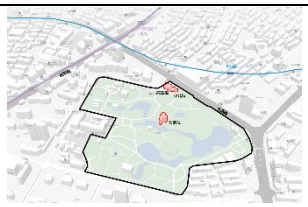
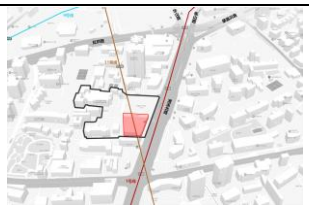
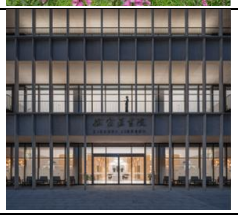
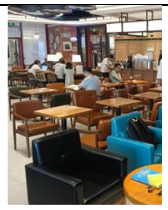
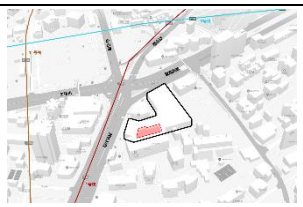
| ID | Site Axonometric Diagram | Embedding Venues | Embedded Reading spaces | |
|---|---|---|---|---|
| A2 |  |  |  |  |
| B2 |  |  |  |  |

**Table 4. Type 3 Cases. Source: Online images for embedding venues; authors' own drawings and photographs for others.**

| ID | Site Axonometric Diagram | Embedding Venues | Embedded Reading spaces | |
|---|---|---|---|---|
| A3 |  |  |  |  |
| B3 |  |  |  |  |
| C3 |  |  |  |  |

### 2.2. Conceptual Framework

Cultural accessibility is conceptualized as a composite capacity, evaluated across three interrelated dimensions:

(1) **Spatial use level:** use intensity, user groups, and activity types.

(2) **Behavioral embedding:** incorporation of use into travel patterns.

(3) **Perceptual/experiential level:** users' subjective evaluation of participation conditions.

These dimensions were examined through triangulation of multi-source data, forming an integrated understanding of how spatial and functional integration influences cultural accessibility.

### 2.3. Data Collection and Analysis

For this study, we used multiple methods in parallel, including behavioral mapping, surveys, and interviews. Each case was observed over two days—one weekday and one weekend. To ensure comparability, cases in the same subdistrict were surveyed on the same or corresponding dates.

Over the period from July to August in 2024, a total of 7122 behavioral mapping records and 421 valid questionnaires (A1: 39, A2: 69, A3: 46, B1: 35, B2: 94, B3: 59, C1: 39, C3: 40) were obtained, alongside 214 interviews. Behavioral mapping recorded all users across five daily periods: morning, noon, afternoon, evening, and night. Surveys and interviews focused on adolescents, young adults, and middle-aged users involved in reading, or working/studying activities. Children and older adults were not included in the sample. To ensure data quality, we applied random sampling and conducted all surveys and interviews face-to-face.

## 3. Results

### 3.1. Behavioral Mapping Results

Figure 1 presents the user density across the eight cases. We separated the data by weekdays and weekends, and also examined differences by age, gender, and activity type. In general, Case B2, A2, and A3 display higher densities, whereas the remaining cases are similar. Following this, Figure 2 compares user composition using combined weekday and weekend data.

**Age composition:** Across all subdistricts, Type 3 cases appear to have a higher proportion of middle-aged users. This pattern may indicate a possible link between the proportion of middle-aged users and the integration type. By contrast, A1, B1, and C3 show more older adults, which may be related to government operation, earlier opening dates, and being nearer to residential areas.

**Gender composition:** Type 2 and Type 3 cases appear to have a higher proportion of female users across subdistricts. This pattern may indicate a relationship between female user proportion and integration type. For reference, C1 also shows a relatively high proportion of female users, which could be affected by factors other than the integration type.

**Activity composition:** Working/studying are the main activities in Type 1 and Type 2 cases across subdistricts, with strolling occurring less often. However, C3 also shows a similar pattern. It can be seen that these cases are all operated by the government, which may help explain the observed activity distribution. In contrast, reading activities appear more often in Type 3 cases across subdistricts, which might be related to this integration type supporting reading use.

**Leisure-related use and temporal variation:** Looking across cases, A2, A3, and B3 exhibit higher proportions of leisure activities, including strolling, resting/sitting, and social interaction. Weekend user densities are also higher in these cases. These patterns may reflect more pronounced leisure-oriented use and greater temporal fluctuation in these cases.

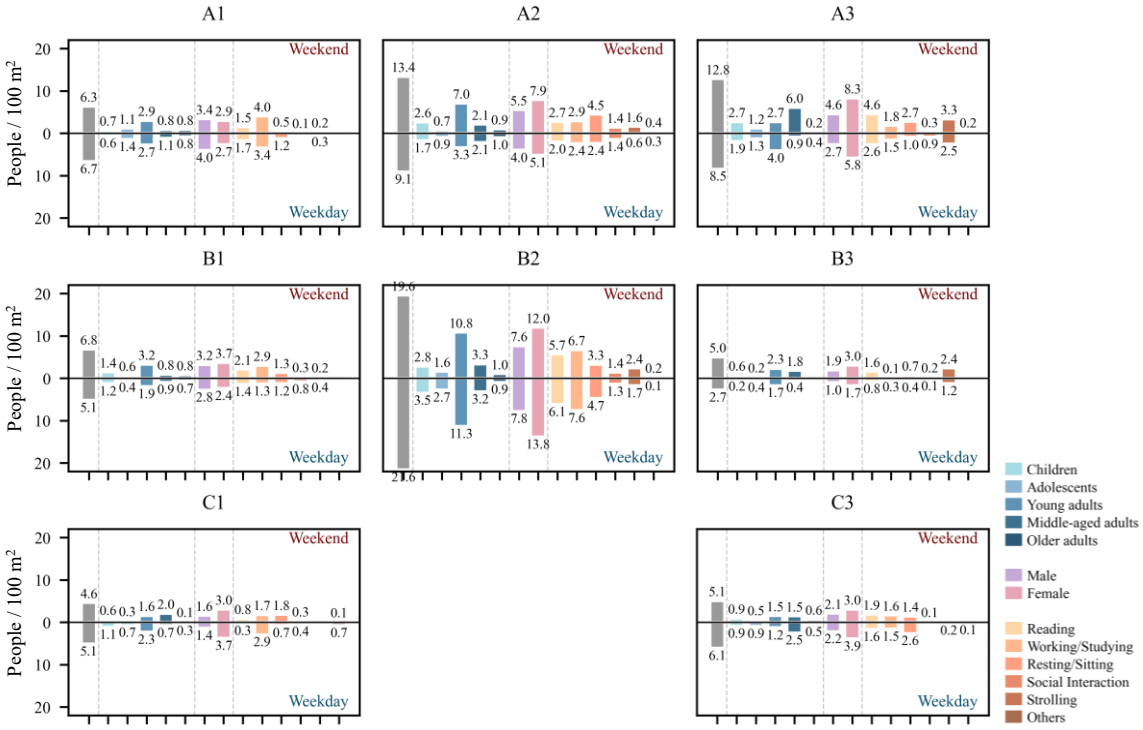



**Figure 1. User density by weekday/weekend and user attributes. Source: Authors.**

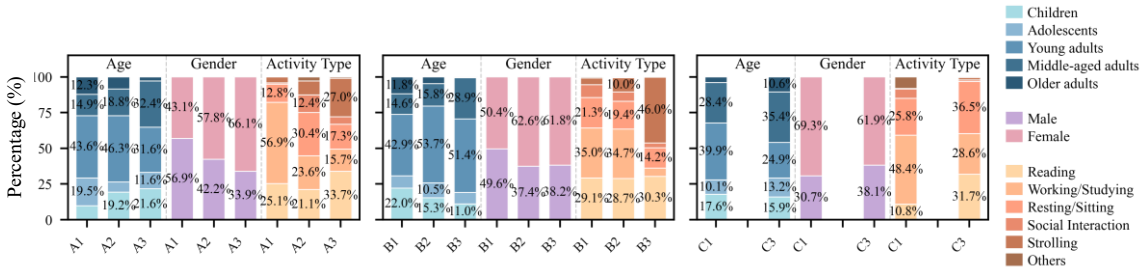



**Figure 2. User composition by age, gender, and activity structure. Source: Authors.**

## 3.2. User Surveys Results

Building on the behavioral mapping, the study further conducted a random questionnaire survey among adolescents, young adults, and middle-aged users involved in reading, studying, or working activities.

**User profiles and demographic characteristics:** Figures 3 show respondents' occupation, residence, and companionship. Primary user groups include individuals with flexible schedules, and also a substantial proportion of full-time workers (30–55%). Visiting with companions is common (30–50%). Most users are local, though B2 and B3 include higher proportions of non-local users, likely influenced by tourism resources and subdistrict service capacity.

**Modes of use and use frequency:** Figure 4 illustrates respondents' modes of use, frequency, and their combined patterns. Based on reported primary purpose during the current trip, use was categorized as **purpose-oriented** (visiting the reading space as the main destination) or **accompanying** (using it alongside other activities). Across all subdistricts, accompanying use is highest in Type 3 cases, followed by Type 2, and lowest in Type 1, suggesting a potential link between users' mode of use and integration type. Differences in use frequency between high- and low-frequency users are observed across cases, but no consistent pattern emerges across subdistricts.

**Combined behavioral patterns of use:** Combining mode and frequency, users were classified into four behavioral patterns: high-/low-frequency purpose-oriented and high-/low-frequency accompanying. A1 and B1 are dominated by high-frequency purpose-oriented users; C1 and A2 attract both high- and low-frequency purpose-oriented users; B2 and Type 3 cases show more accompanying-use patterns, particularly low-frequency accompanying users.

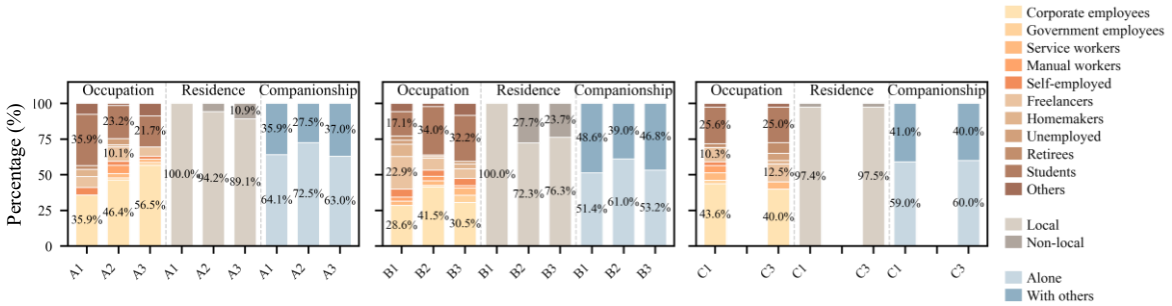



**Figure 3. Distribution of respondents by occupation, residence, and companionship. Source: Authors.**

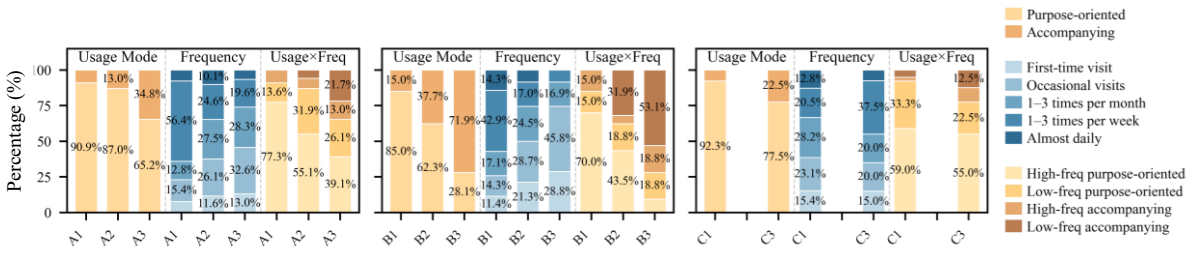



**Figure 4. Respondents' modes and frequency of use and their combined patterns. Source: Authors.**

**Service radius and travel distance:** Figure 5 shows respondents' previous fixed activity locations (residence, work, or school) and average distance to the reading spaces. Across all subdistricts, Type 3 cases have the largest distances, followed by Type 2, and Type 1 the smallest, suggesting a potential link between service radius and integration type. Subdistrict B shows generally larger radii, indicating that locational conditions such as subdistrict service capacity may also play a role.

**Travel modes and travel paths:** Figure 6 shows that larger service radii correspond to higher use of medium- and long-distance transport (metro, bus, or private car) and longer travel times. Cases with larger service radii also include more users whose trips originate outside their residence, indicating greater capacity to accommodate diverse daily travel paths.

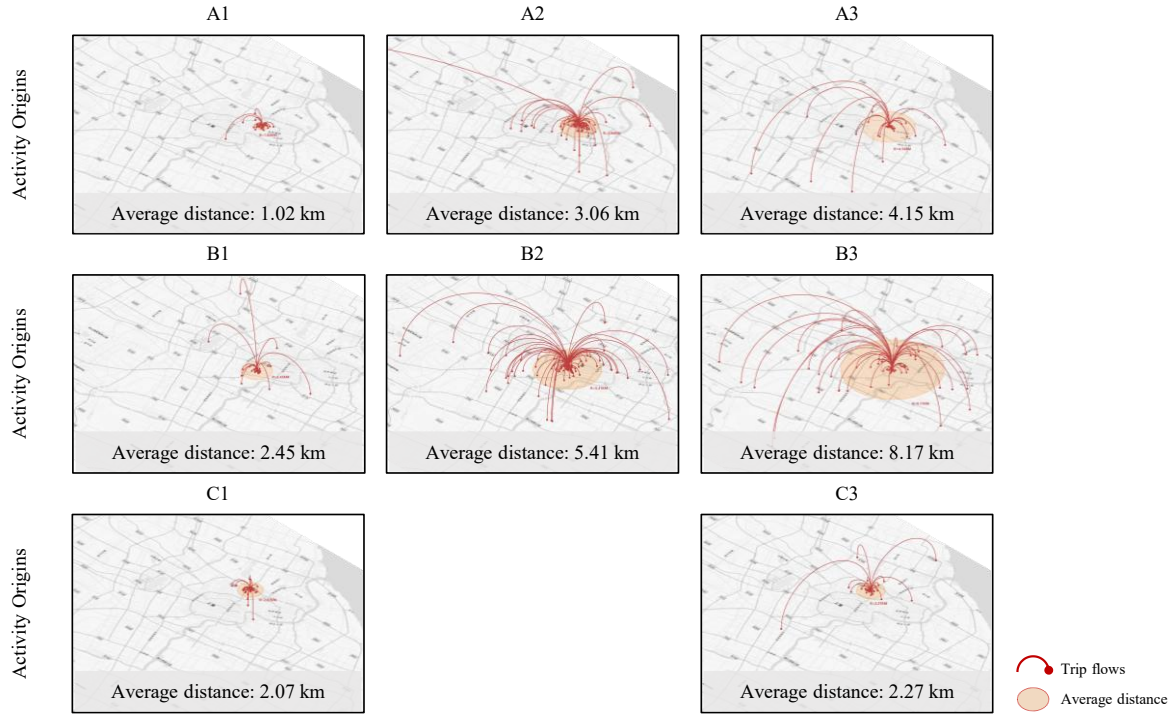



**Figure 5. Respondents' previous fixed activity locations and distance to reading spaces. Source: Authors.**

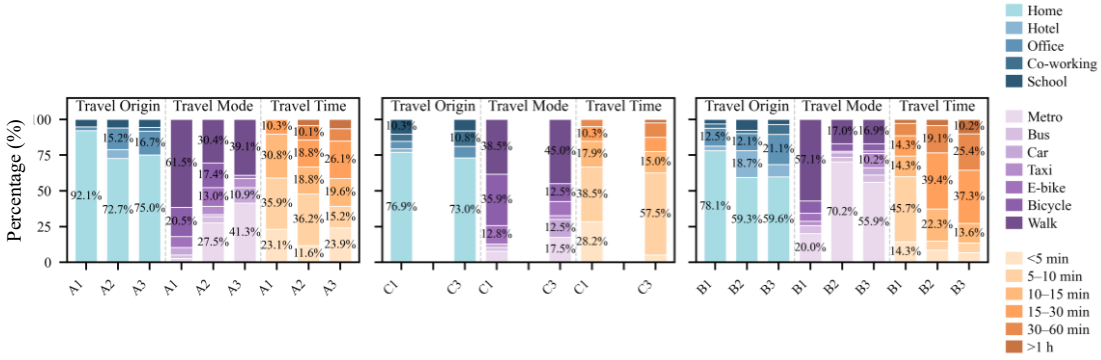



**Figure 6. Travel characteristics from previous fixed activity locations to reading spaces. Source: Authors.**

## 3.3. User Interviews Results

Responses from semi-structured interviews were coded across four themes, including awareness channels, use scenarios, use evaluation, and perceived integration-related convenience (Figure 7). Interviewers guided respondents to evaluate both the case they were using and, where applicable, other comparison cases within the same subdistrict. In some instances, respondents also commented on non-sampled cases of the same integration type or provided general evaluations of that type of reading space. To capture these references, additional codes (O1, O2, and O3) were introduced for Types 1, 2, and 3. Absolute coding frequencies are reported because some questions yielded limited responses.

**Awareness channels:** Users of Type 1 and 2 cases primarily learned about reading spaces through active searching, recommendations, or promotions. In Type 3 cases, users more often encountered spaces incidentally during other activities in the same venue. A2 (park integration) and B1 (community canteen) also facilitated incidental encounters.

**Use scenarios:** Accompanying use is concentrated in Type 3 cases, occurring with high-frequency daily or low-frequency leisure activities and embedded into temporal gaps such as short breaks. Purpose-oriented use typically involves trips where the reading space is the primary destination, yet some users combine these visits with activities outside the venue. This pattern is more common in Subdistrict B, which has higher service capacity.

**Use evaluation:** Respondents' use evaluations focused on seven aspects: spatial location, book provision, basic and integrated facilities, user atmosphere, spatial experience, and operation. In Type 1 cases, both positive and negative evaluations were largely concentrated on spatial location. Type 2 cases received more positive feedback on location and spatial experience. Type 3 cases highlighted integrated facilities positively, while negative evaluations spanned multiple aspects, including basic facilities, user atmosphere, and spatial experience. Some comments reflected personal perceptions, prompting additional coding for content directly related to integration strategies.

**Perceived integration-related convenience:** Most frequent in Type 2 and 3 cases, including increased frequency or flexibility of use, one-stop fulfillment of multiple needs, suitability for family or group visits, convenient breaks during work or study, and a general sense of convenience. Case A2 particularly supports work/study breaks, while other Type 2 and 3 cases are associated with one-stop fulfillment of needs.




**Figure 7. Frequency of coded themes across cases. Source: Authors.**

# 4. Discussion and Conclusion

## 4.1. Performance of Cultural Participation under Integration Strategies

Looking across cases, we observed that user composition and awareness channels vary with integration type. Type 3 cases tend to have higher proportions of middle-aged users, while female users are more common in Type 2 and Type 3 cases. Regarding awareness channels, users in highly integrated settings more often come across reading spaces incidentally during other activities, rather than through active searching. In practice, these observations suggest that **cultural participation may arise from everyday exposure rather than from pre-defined demand**. Although causal relationships cannot be determined in this study, the repeated co-occurrence of these patterns appears to indicate that **spatial and functional integration may expand access pathways and support broader participation across user groups.**

## 4.2. Modes of Cultural Participation under Integration Strategies

User surveys show that both modes of use and service radius are associated with integration type. Type 3 cases exhibit the highest proportion of accompanying use and the largest service radius, followed by Type 2, while Type 1 remains the lowest. And Interviews indicate that integration allows the use of reading spaces to be incorporated into daily routines, leisure activities, and temporal gaps. Although causal relationships also cannot be confirmed, the repeated co-occurrence of these patterns **may suggest that spatial and functional integration reduces reliance on dedicated trips,** allowing cultural participation to be more flexibly integrated into everyday mobility and schedules, which in turn **may contribute to both expanded spatial reach and more efficient use of time.**

## 4.3. Additional Factors Potentially Shaping the Effects of Integration

Findings further indicate that governance arrangements and subdistrict service capacity interact with integration type, jointly influencing patterns of use and participation. Cases operated by the government tend to have higher proportions of older users, and working/studying predominate, with less strolling. Subdistrict service capacity also appears to play a role. Cases located in areas with higher service capacity show larger service radii and stronger connections with external activities. These observations **may suggest that the effects of integration are shaped not only by individual sites but also by broader urban contexts.**

## 4.4. Strategic Differences across Integration Types

Looking across the three integration types, we observed distinct strategic pathways: **service co-location (Type 1), experiential synergy (Type 2), and path-based alignment (Type 3).** Type 1 cases, embedded within community service centers, tend to rely on proximity and mostly attract purpose-oriented users, with limited influence on trip organization. Type 2 cases introduce recreational contexts, which **appear to** expand service radius and enhance experiential value. **Type 3 cases, embedded in commercial complexes, appear to show the strongest integration effects**, including higher accompanying use, broader service reach, and more frequent incidental encounters, and these advantages may also place greater demands on spatial design and governance to address potential tensions from intensified and diversified use.

# 5. Conclusion and Limitations

This study examined how different modes of spatial and functional integration shape cultural participation through embedded reading spaces. Moving beyond proximity-based planning, cultural accessibility was treated as a composite capacity, reflected in actual use. Results suggest that increasing integration

complexity corresponds to a shift from service co-location to experiential synergy and further to path-based alignment. Integration practices based on commercial complexes seem to provide the greatest potential to reach more users, raise awareness, and help plan trips and use time more efficiently, which may support their role as potential cultural anchors. The study advances knowledge by linking cultural accessibility to actual use, revealing how integration strategies shape participation, and uncovering differences within these strategies. Limitations include the small number of cases, sampling constraints, and the inability to determine causal relationships. Future studies could include more cases, improve data collection, and use systematic approaches, such as QCA, to better explore the ways people engage with culture.

## 6. References

Chia, C. (2001) 'Transformation of libraries in Singapore', *Library Review*, 50(7–8), pp. 343–348.

Geurs, K.T. and van Wee, B. (2004) 'Accessibility evaluation of land-use and transport strategies: review and research directions', *Journal of Transport Geography*, 12(2), pp. 127–140.

Hansen, W.G. (1959) 'How accessibility shapes land use', *Journal of the American Institute of Planners*, 25(2), pp. 73–76.

Ingram, D.R. (1971) 'The concept of accessibility: a search for an operational form', *Regional Studies*, 5(2), pp. 101–107.

Jancovich, L. (2017) 'The participation myth', *International Journal of Cultural Policy*, 23(1), pp. 107–121.

Kim, Y. (2014) 'A study on the establishment of a public library in mixed-use complex: focused on public libraries in Seoul', *Journal of Korean Library and Information Science Society*, 45(3), pp. 395–414.

Kwan, M.-P. (1999) 'Gender and individual access to urban opportunities: a study using space–time measures', *The Professional Geographer*, 51(2), pp. 210–227.

Kwan, M.-P. (2012) 'The uncertain geographic context problem', *Annals of the Association of American Geographers*, 102(5), pp. 958–968.

Mualam, N., Salinger, E. and Max, D. (2019) 'Increasing the urban mix through vertical allocations: public floorspace in mixed-use development', *Cities*, 87, pp. 131–141.

Páez, A., Scott, D.M. and Morency, C. (2012) 'Measuring accessibility: positive and normative implementations of various accessibility indicators', *Journal of Transport Geography*, 25, pp. 141–153.

Pozoukidou, G. and Chatziyiannaki, Z. (2021) '15-minute city: decomposing the new urban planning eutopia', *Sustainability*, 13(2).

Ren, F., Tong, D. and Kwan, M. (2014) 'Space–time measures of demand for service: bridging location modelling and accessibility studies through a time-geographic framework', *Geografiska Annaler: Series B, Human Geography*, 96(4), pp. 329–344.

Snedcof, H.R. (1985) *Cultural facilities in mixed-use development*. Washington, DC: Urban Land Institute.

Wachs, M. and Kumagai, T.G. (1973) 'Physical accessibility as a social indicator', *Socio-Economic Planning Sciences*, 7(5), pp. 437–456.

AI Tool (GPT-4/2026). English translation of text. OpenAI Platform. https://openai.com/chatgpt.