FAÇADE CHARACTER REPETITION AND IT'S IMPACT ON LEGIBILITY OF URBAN LANDSCAPES: A CASE STUDY OF MAIN STREET PETTAH AND GALLE ROAD (BAMBALAPITIYA)

ABEYRATHNA A.H.M.C.V.[1]* & COOREY S.B.A.[2]
[1,2] Faculty of Architecture, University of Moratuwa, Moratuwa, Sri Lanka
[1] *chamodi.vichakshana@gmail.com,* [2] *sbacoorey@gmail.com*

Abstract: The spaces feature of an urban landscape creates a unique identity. Street patterns, building facades, and open spaces configuration play a crucial on shaping the identity. Sri Lanka does not have specific urban design standards or regulations addressing the visual character of facades, resulting in incoherent and repetitive façade designs across townscapes. The study examines the repetition of façade character and the way it influences the legibility of Urban landscapes, aiming to bridge gaps in current urban perception frameworks and inform future regulatory guidelines. Research analyses how repetition operates through Gestalt principles of proximity, symmetry, and similarity, and will be based on the legibility concepts of Kevin Lynch and Ian Bentley. Using Colombo, focusing on Main Street Pettah and Galle Road (Bambalapitiya) as the study context, and it employed a literature review, field observation, and questionnaire-based interviews. Data are analysed using a qualitative descriptive approach and logical comparisons. The findings reveal nine primary repetition patterns in façade composition, most of which are unrelated to building function. The legibility of these façades was influenced by the presence and combination of Gestalt principles: dual occurrences of rules enhanced legibility, while individual effects varied—proximity increased legibility, whereas symmetry or similarity alone tended to reduce it. The study concludes that façade repetition significantly affects urban legibility under Gestalt principles, offering valuable insights for developing future façade design guidelines and strengthening urban identity.

Keywords: *Urban Façade, Character Repetition, Legibility, Gestalt Theory, Perception*

1. Introduction

In the domain of urban design, façades are more than aesthetic wrappers they are integral communicators of a city's identity. As the most visible layer of built form, façades influence how individuals perceive, navigate, and emotionally connect with urban environments. Their composition, rhythm, and articulation contribute to the legibility of a city, a concept defined by Kevin Lynch as the ease with which a city's structure can be understood and mentally mapped by its users.

In contemporary Colombo, particularly within the rapid transforming zones, the development of façades has increasingly followed market-driven tendencies rather than a cohesive regulatory or design-led vision. Majority of commercial corridors contemporary façades display repetitive patterns of materials, colours, and formal elements. While such repetition is often unintentional emerging from ad-hoc development, developer preference, and fragmented planning control it contributes to visual monotony, weak contextual integration, and reduced spatial intelligibility. These conditions raise critical questions about how façade repetition influences the overall legibility of urban environments and how it shapes the way individuals perceive, interpret, and navigate the city.

Despite global awareness of façade design guidelines and visual quality standards, Sri Lanka continues to lack context-specific regulatory frameworks that address the psychological, perceptual, and experiential dimensions of urban visuality. Existing policies tend to prioritize functional or economic concerns, leaving aesthetic coherence and cognitive experience largely unconsidered. As a result, the cumulative effect of repetitive façade character remains poorly understood, particularly in terms of its implications for place identity and everyday wayfinding.

The present study responds to this gap by examining façade repetition as both a cognitive and an aesthetic variable influencing urban legibility. Drawing on Gestalt Theory especially the principles of proximity, similarity, and symmetry the research investigates how repeated visual stimuli are grouped, perceived, and mentally processed by urban users. These theoretical lenses offer insight into how the human mind constructs meaning from visual patterns and how façade repetition can either support or undermine the clarity of urban form.

This study is anchored in two major urban corridors in Colombo: Main Street in Pettah and Galle Road in Bambalapitiya. These contrasting urban fabrics provide a relevant basis for evaluating how repetitive façade character impacts perception, orientation, and place identity. Through a qualitative descriptive methodology, the research integrates photographic analysis with user surveys to decode how different types and arrangements of repetition influence the legibility of place.

The primary objectives aims to identify types and patterns of repetition present in façades withinselected urban contexts,

*Corresponding author: Tel: +447440150776 Email Address: chamodi.vichakshana@gmail.com
DOI: https://doi.org/10.31705/FARU.2025.29

analyse the relationship between repeated façade characteristics and the perceived legibility of streetscapes as well as understand public perception and psychological response toward repetition in urban façades, focusing on spatial recognition and comfort.

Ultimately, the study advocates for design-conscious repetition and localized façade regulations to reinforce legibility and ensure coherent visual language within Sri Lanka's urban development narrative.

This research contributes to the evolving field of landscape architecture and urban design in Sri Lanka by highlighting how visual repetition in façades impacts spatial experience and city image. The findings provide a conceptual framework that can influence façade design standards, helping avoid visual monotony while enhancing city legibility. Additionally, the study encourages more human-centered urban planning by integrating aesthetic perception with psychological comfort, thus aligning local practice with global best practices in placemaking.

Although, the study limits itself to commercial and mixed-use façades and does not evaluate residential areas or informal settlements. Additionally the limitations include subjectivity in perception data, variability in environmental conditions, and the evolving nature of urban façades. While findings apply to similar South Asian urban contexts, they may not generalize to cities with significantly different architectural or cultural frameworks.

2. Literature Review

Urban facades function as the most dominant component of a built environment, acting as a mediator between interior programs and the external public realm. According to Askari and Soltani (2018), facades directly influence the quality of streetscape, urban identity, and user perception. Simultaneously, facades define spatial edges and highly contribute to the city's sense of place in shaping visual and psychological comfort. (Gharai, Shokouhi 2006)

Globally, façade designs are often subjected to regulation to ensure heritage protection, consistency, and to enhance the urban aesthetic of the city. Sri Lankan cities–particularly Colombo, as the commercial capital of the country–façade development is often disconnected from cohesive design principles. Studies indicate that contemporary façade designs increasingly prioritize commercial branding and material trends over contextual coherence (Shashikala 2015). Furthermore, Sri Lankan policies largely prioritized infrastructure development over aesthetic considerations, leaving little room for design interventions that reflect cultural narratives or human-centric design principles (Alishah et al., 2016). These design behaviours have often led façade patterns, or character, to repeat, causing visual monotony and reducing place distinctiveness. (Perera, 2002).

The situation gets further complicated by the rapid urbanization, yet the remaining colonial heritage remains underneath. Which makes the repetition in façade character an issue not just a visual factor but also a cultural and perceptual challenge, obscuring rather than enhancing the collective memory of place.

Understanding the effect of facades in a way people perceive and navigate in urban environments is central to designing functional and meaningful spaces. The concepts of legibility by Kevin lynch have shaped urban design thinking for decades.

Legibility, as introduced by Lynch (1960), is a concept in understanding how urban form is perceived and navigated. It refers to the clarity of spatial configurations that are organized and recognized. Considering façade designs, Legibility is enhanced when design elements—such as façade texture, materiality, or rhythm—convey visual consistency. (Lynch 1960) Lynch emphasizes that "the more these characteristics overlap, the stronger the impression of a unified region" (Lynch 1960, p. 104). However, individual observers interpret urban form differently, making perceptual legibility a subjective yet critical design concern

Legibility is shaped by two primary variables: **spatial configuration and complexity of elements**, and **recognizability of visual features**. (Koseoglu & Onder, 2011) Repetitive façades that lack distinctiveness may reduce a user's ability to differentiate between locations, thereby impairing navigational efficiency and spatial memory. But in contrast façade representing thoughtful repetition—through controlled variation and contextual responsiveness—can enhance visual recognition and contribute to a more legible urban fabric.

Repetition as an element in architecture is a double-edge phenomenon. Studies identify two primary forms od repetition: static spatial repetition (e.g., horizontal alignment of identical units) and dynamic, quasi-temporal repetition (e.g., variation within uniformity) (Salingaros 2014)

While repetition can introduce order and rhythm, sameness leads to "informational collapse"—a state where visual complexity is lost, and the human brain disengages from the environment. Furthermore human are naturally drawn to

structured complexity, and the poor repetition creates psychological discomfort and perceptual fatigue (Giecewicz and Kwieciński n.d.).

Gestalt theory—a psychological model provides a framework on how people process repetition visually. It explains how a person would group visual stimuli into coherent wholes. The principles of proximity, *similarity*, and *symmetry* are central to this framework. These perceptual rules influence the way a person perceive rhythm, pattern, and unity in built form (Graham 2008). There could be situations where multiple Gestalt laws are simultaneously present, in these situations repetition becomes more intelligible and aesthetically meaningful. However, when poorly executed, repetition can obscure legibility by creating visual noise instead of clarity. (Graham 2008). Likewise;

Table 1 Facade repition types

Façade Repetition Types	Gestalt Principles	Legibility Outcomes
Vertical repetition	Proximity	High recognizability (when 2 or more Gestalt rules overlap)
Horizontal repetition	Similarity	Visual monotony (when repetition lacks variation)
Modular repetition	Symmetry	Contextual disconnection (when repetition ignores surrounding form)

Further studies showcases, the emotional and psychological responses to repetition have been explored in environmental psychology. Repetitive elements lack of variation led to mental fatigue, confusion, and even irritation (Kaymaz, 2012). These negative responses are particularly potent in urban settings, where sensory stimuli are constant and overwhelming. If urban façades do not provide points of interest, variation, or visual hierarchy, they risk becoming sources of stress rather than orientation or comfort (O'Connor, 2011).

Given this context, repetition should be employed judiciously in urban design. Meanwhile it can be a power tool for reinforcing identity, providing continuity, and organizing space when used appropriately, it must be balanced with variation and contextual awareness to prevent the loss of meaning and visual fatigue. Eventhough it is not a common phenomenon, application of Gestalt principles in design practice—particularly those of similarity, proximity, and figure-ground relationships— can guide architects and planners in creating façades that support urban legibility without contributing to monotony (Graham, 2008; Nan et al., n.d.).

In conclusion, repetition of urban façade character plays a major role in shaping legibility, identity and experience of cityscapes. Colombo as a context, where façade design is largely unregulated and commercially driven, repetition often leads to visual homogeneity and reduced legibility. As literature emphasizes the need for a balance is a need. Drawing on Gestalt theory, biophilic design, and perceptual psychology to understand how people experience repetitive elements in space. The call for context-specific urban design guidelines that prioritize perceptual clarity, spatial diversity, and cultural expression is clear. Façades as the face of a city must be more than aesthetic surfaces—they must communicate meaning, aid navigation, and support the psychological well-being of urban dwellers.

3. Methodology

The study employs a qualitative research methodology to explore how repetition in urban façades shapes the legibility of streetscapes, grounding its analysis in both observational and perceptual inquiry. The case study is designed to be a comparative study, integrating field-based documentation with user perception analysis, allowing the investigation to gain the visual description toward an interpretive understanding of how repeated façade elements influence cognitive responses.

Methodological approach is informed by a theoretical foundation that combines perceptual psychology with urban design theory. Gestalt principles—specifically proximity, similarity, and symmetry—provide a lens through which patterns of visual grouping within façades are examined, offering insight into how repeated elements are mentally organized by observers. Complementing this, concepts derived from urban spatial cognition and Lynch's theory of imageability guide the assessment of legibility, focusing on spatial configuration, complexity, and the recognizability of architectural elements. Together, these frameworks enable the study to interpret repetition not merely as an aesthetic condition but as a factor that fundamentally shapes how users perceive, recall, and navigate urban environments.

The study employed two qualitative data collection methods: a photographic survey and a perception-based questionnaire. Street-level photographs of building façades were taken along selected segments of Main Street and Galle Road, then analysed for patterns of repetition, rhythm, material usage, and typology. In parallel, an online questionnaire

was distributed to 50 participants familiar with both study areas, incorporating closed and open-ended questions designed to capture perceptions of façade repetition and its influence on legibility, memorability, and orientation.

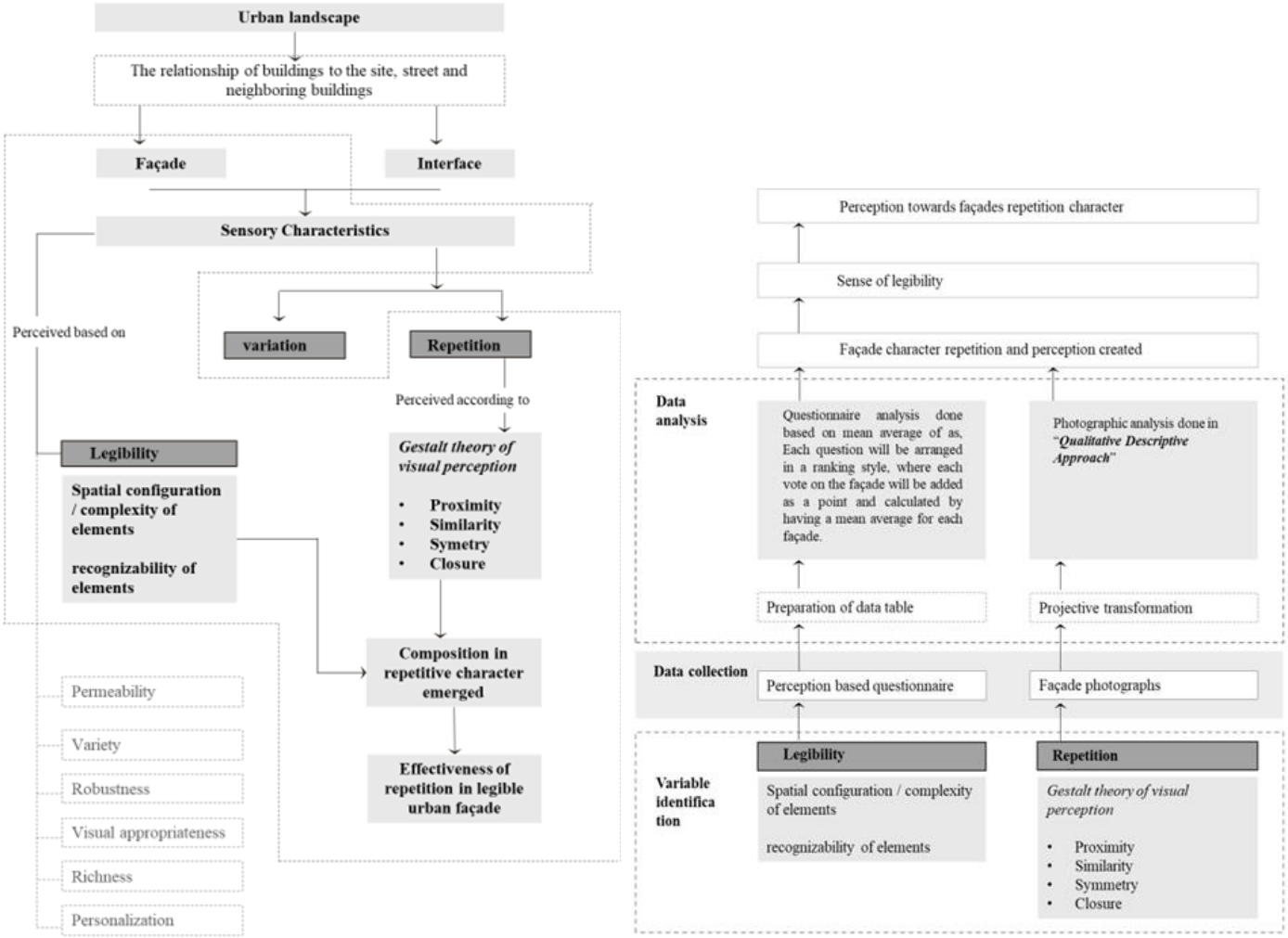


Figure 1 Theoretical framework

The sampling strategy included the deliberate selection of two contrasting sites—Main Street in Pettah, characterized by dense traditional trade, mixed low-rise structures, and layered architectural styles, and Galle Road in Bambalapitiya, a rapidly developing commercial corridor marked by high-rise buildings, branded façades, and modern material palettes. The participant sample consisted of 50 individuals with varied demographics, all of whom had prior exposure to both streets to ensure experiential validity.

Figure 2 Site location
Source: Google Maps. (n.d.).

A systematic interpretation of both visual and perceptual material collected from the two streets (Sandelowski, 2000). as part of the photographic analysis. Façade images were examined to classify dominant repetition patterns—vertical, horizontal, and modular—through proportional comparisons supported by fiducial lines. Figure 3 illustrates this process, showing the transition from the raw captured façade to a projective, rectified image used for assessing alignment, proportional rhythm, and compositional order.

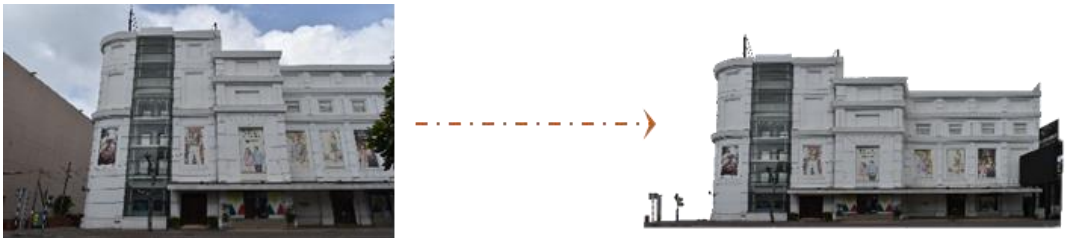


Figure 3 The captured picture trasmitted in to the projective transmitted image
source : Authur

Gestalt principles such as similarity, proximity, and continuity informed the interpretation of how architectural elements form perceptible groupings (Wertheimer, 1923), enablingto capture the rhythmic and structural organisation inherent to each façade. This visual dataset was complemented by a perception-based survey in which Likert-scale responses were averaged to identify general perceptual tendencies (Likert, 1932), and open-ended responses were thematically coded to reveal recurring insights regarding legibility, memorability, and spatial clarity. The results of this integrated analysis are visualised in Figure 4, which presents predicted recognisability, legibility, and spatial complexity values across the sampled façades; the plotted trends highlight how fluctuations in façade rhythm and element repetition correspond to variations in users' reported ease of recognition and orientation.

Combining photographic interpretation with participant perceptions aligns with established methodological practices that integrate visual observation and experiential accounts in studies of urban legibility (Lynch, 1960; Creswell & Poth, 2018). This combined analytic process enabled the identification of relationships between physical façade characteristics and users' cognitive mapping and navigational experiences, thereby forming a cohesive understanding of how repetition contributes to urban clarity and recognisability.

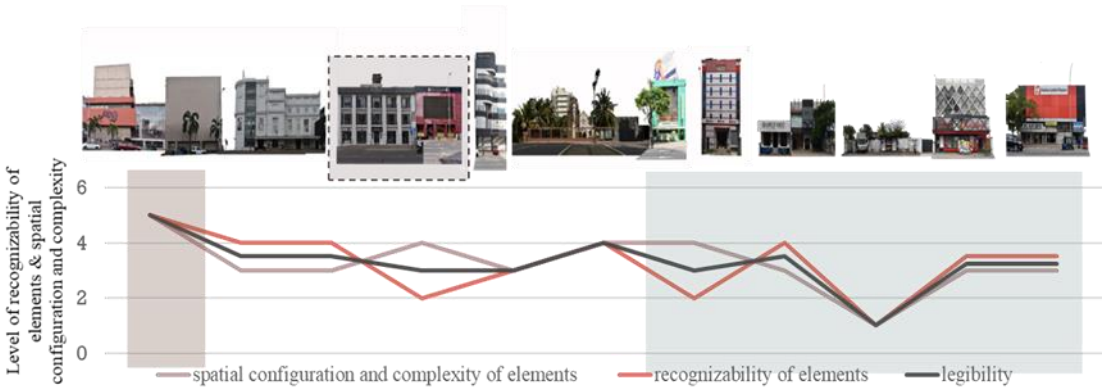


Figure 4 Predicted output of the analysis
Source – author

4. Data Presentation & Analysis

As the data collection done based on two main sources—photographic surveys and perception-based questionnaires—focusing on the repetitive characteristics of urban façades and their influence on legibility. The analysis is framed by Gestalt principles and the cognitive variables of spatial configuration and recognizability.

4.1 PHOTOGRAPHIC ANALYSIS - PATTERNS OF REPETITION

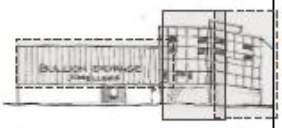
The analysis provides a primary method of identifying repetition in urban façades. The site is recorded using images in both Galle Road and Main Street pettah. Repetition is analyzed through Gestalt principles of **proximity**, **similarity**, and **symmetry**.

Findings show that **Galle Road** exhibited vertical repetition of large glass and alucobond modules in high-rise buildings. This similarity in form and material created long uninterrupted visual flows, especially in banking and commercial buildings. In contrast, **Main Street Pettah** featured repetitive characters formed through signage clutter, shopfront extensions, and low-budget displays. Here, repetition emerged more through **proximity** and **similarity**, but with less symmetry.

Through this analysis, nine distinctive types of repetition were identified, each contributing to the spatial and perceptual rhythm of the streetscape. These included vertical repetition—such as the stacking of windows and signage across multiple floors—and horizontal repetition, visible in the uniform arrangement of storefronts and architectural elements along a linear plane. Certain colour themes, most notably the frequent use of white, blue, and metallic aluminium finishes, further emphasized visual consistency. Material repetition was especially evident in the extensive use of glass and Alucobond cladding, while the recurrence of boxy or modular forms reflected a tendency toward geometric uniformity. Branding repetition was also common, with logos and signage repeating at frequent intervals. In some cases, façades mirrored themselves across central axes, creating symmetrical compositions, while others employed standardized cladding modules. Additionally, repetition by imitation was observed, where newer façades borrowed stylistic cues from adjacent buildings, either to blend in or capitalize on existing visual identity.

On Galle Road, these repetitions were often structured and intentional, contributing to a smooth but sometimes indistinguishable urban frontage defined by polished surfaces and commercial branding. The effect was sleek but occasionally sterile, as excessive uniformity muted individual character. In contrast, Main Street Pettah presented a more fragmented repetition landscape. Here, repetition arose organically—often without formal design—through layers of adaptation and economic necessity. Vertical stacking of signage, ad hoc use of materials, and closely packed shopfronts created a densely textured but visually chaotic environment, reflecting the street's commercial vibrancy and historic layering.

Table 2 The manner of repetition appeared

The manner of repetition	Description	Example	Building usage
	Usage of colour white in cubist model type façades		• Fashion and clothing stores • Accessory and jewelry shops • Furniture or equipment stores
	White colored typical shed type façades with horizontal and vertical strips.		• Banks • Fashion, clothing, accessory stores • Furniture storesOffice buildings of different government or private institutions
	The colonial architectural type façades		• Restaurants • Clothing stores • Non-governmental organizations of different purposes • Finance companies • Accessory and jewelry shops
	Articulated expressionism used in façades with the use of curtain wall glazing.		• Shopping malls • Restaurants and hotels • Finance companies • Accessory and jewelry shops
	Mix use of industrial vernacular and colonial architecture façade characteristics.		• Restaurants • Clothing stores • Non-governmental organizations • Finance companies • Accessory and jewelry shops Hotels

	Usage of alucobond cladding material in cubist model façade s		• Restaurants • Clothing stores • Finance companies • Equipment stores • Accessory and jewelry shops • Book stores
	Low budget façade designs.		• Restaurants and coffee shops • Mobile accessory shops • Book stores
	Usage of façade as a sign		• Restaurants and coffee shops • Mobile accessory shops Clothing and shoe stores
	Usage of curtain wall glazing in industrial vernacular type façades.		• Hospitals • Hotels • Finance related offices • Shopping malls • Non-governmental organizations • Fashion and clothing stores

4.2 QUESTIONNAIRE ANALYSIS - PERCEPTION OF LEGIBILITY

A structured survey involving 50 respondents was conducted to explore how patterns of repetition influence urban legibility, spatial orientation, and the memorability of built environments. The findings revealed a nuanced perception of repetition. While a significant majority—68%—acknowledged the presence of repetition in façades, they often interpreted it as either excessive or lacking intentionality. Around 62% of participants reported difficulty navigating urban areas where repeated elements were not balanced with variation or anchored by distinguishable landmarks. Interestingly, 71% of respondents expressed a preference for façades that incorporated subtle variations within repetitive frameworks, such as colour changes or asymmetric rhythms, suggesting that controlled diversity enhances cognitive engagement. Over half (56%) felt that high material similarity, particularly in continuous glass façades, contributed to a loss of identity across spaces. Only a minority—24%—felt that repeated façades made it easier to remember specific locations or storefronts, challenging the assumption that repetition alone enhances spatial recall.

Overall, Galle Road, despite its sleek and modern façade language, was often described as visually monotonous, while Pettah's more chaotic but visually diverse streetscape was perceived to provide stronger orientation cues. The contrasting rhythms and material palette in Pettah offered more points of reference, aiding recognition and wayfinding despite its lack of formal design coherence.

4.3 GESTALT-BASED LEGIBILITY OUTCOMES

Interpretation of the visual data was grounded in three core Gestalt principles—proximity, similarity, and symmetry—which offered insights into how repetition affects perceptual legibility. The principle of proximity revealed that façade elements positioned closely together were often read as cohesive wholes, enhancing the sense of spatial continuity. This effect was particularly notable in Pettah, where the dense configuration of shopfronts and signage benefited from this perceptual grouping. The principle of similarity, on the other hand, showed that repetition of materials or forms—such as the widespread use of Alucobond panels along Galle Road—initially contributed to visual unity but ultimately diminished distinctiveness when overapplied, resulting in what can be described as a collapse in legibility. Symmetry, though less frequently encountered in both case study areas, had a modest positive impact on recognizability when present, aiding in spatial orientation by creating balanced, predictable visual patterns.

Notably, façades that demonstrated a combination of proximity and similarity were perceived as more legible, suggesting that overlapping Gestalt principles reinforce perceptual clarity. In contrast, repetition driven solely by similarity, especially without contrast or spatial hierarchy, often caused visual fatigue and disorientation. This underscores the importance of balancing repetition with thoughtful variation to support navigability and urban identity.

4.4 COMPARATIVE SUMMARY - MAIN STREET VS. GALLE ROAD

The comparison of façade characteristics in both contexts Pettah and Galle Road reveals moderate, conscious repetition enhances urban legibility, while unorganized or excessive repetition—despite visual uniformity—reduces legibility and the street image. Pettah's varied repetition aids landmark recognition and navigation, whereas Galle Road's sleek uniformity offers aesthetic appeal but limits legibility.

Table 3 comparative summary

Feature	**Way of Appearance**	
	Main Street (Pettah)	**Galle Road (Bambalapitiya)**
Dominant Repetition	Vertical, material	Horizontal, material
Visual Rhythm	Varied and chaotic	Uniform and sleek
Landmark Recognition	Moderate (due to contrast)	Low (due to sameness)
Legibility Outcome	Medium-high	Medium-low
User Preference	Better navigability	Better aesthetics

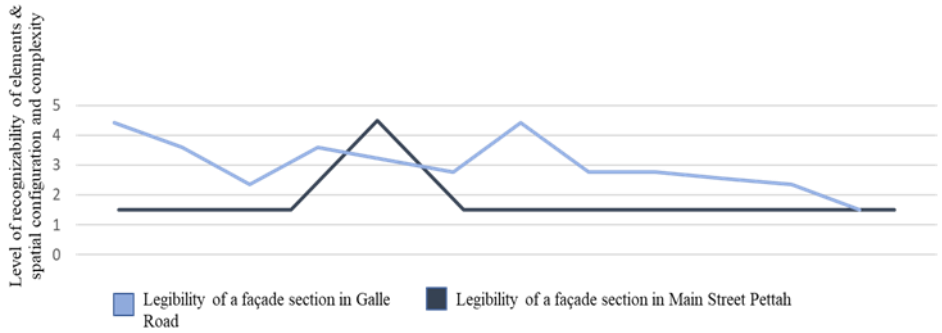


Figure 5 comparison of legibility in between Galle Road and pettah
Source - author

4.5 KEY INSIGHTS

The analysis reflects repetition, when applied without a rhythmic variation, often results in visual monotony that significantly effects on spatial legibility. Uniform façades with minimum differentiation tend to blur into one another, making it more difficult for users to orient themselves or recall specific locations. While Gestalt principles align with Repetition—particularly proximity and similarity—has a possibility of enhancing legibility, but only when moderated by subtle variation. When these principles are applied in isolated phases or in an excess amount, they creates visual fatigue and reduce the ability to create a metal map of the city. Survey responses further revealed that users consistently preferred façades that stood out from their surroundings, particularly those that incorporated functional or stylistic distinctiveness.

This suggests that repetition must be contextually integrated and consciously designed, rather than driven by branding or material availability. For an example Pettah, where informal development and a lack of design oversight prevail, legibility is frequently compromised due to incoherent repetitions and visual clutter. On the other hand, a strategic repetition—when supported by clear design guidelines and enhanced through the creation of recognizable landmarks—would improve the wayfinding ability and urban identity of the city. Ultimately, these findings underscore the importance of a design-aware approach to repetition that prioritizes cognitive legibility and user experience over surface uniformity.

5. Suggestions & Recommendations

The findings suggest clear pathways for enhancing urban façade legibility, drawing directly from the perceptual data and Gestalt-based analysis. urban authorities should introduce comprehensive façade design regulations. Which could be included with the guidelines on permissible materials, signage dimensions, and the allowable frequency of repeated elements, ensuring visual coherence without encouraging monotony. As well as the regulations should either reflect the contextual character or represent the type of building.

Equally important is the application of Gestalt principles in design practice. Architects and urban designers should be encouraged to employ proximity and similarity with intent, fostering a sense of visual order, while consciously avoiding excessive symmetry unless it is counterbalanced by contrast or variation. This theoretical foundation, when thoughtfully applied, can elevate both the cognitive and aesthetic qualities of the urban environment.

Another critical strategy is the deliberate creation of visual anchors—distinctive façades that function as landmarks within otherwise homogeneous streetscapes. These anchors aid spatial orientation and contribute to a stronger urban identity. To further support this, contextual variation must be encouraged. Variation does not imply chaos; rather, controlled diversity in form, scale, texture, and rhythm helps differentiate space without compromising legibility.

Finally, the integration of participatory design feedback is essential. Local users should be engaged through regular surveys and community forums to evaluate how new or existing façades impact their ability to navigate, recognize, and connect with the built environment. This bottom-up approach ensures that legibility strategies are grounded in real human experience rather than purely top-down design intentions.

6. References

Alishah, M., Ebrahimi, A., & Ghaffari, F. (2016). The role of buildings facades of on urban landscape (case study: old context of sari). The turkish online journal of design, art and communication, 6(agse), 1347–1356. https://doi.org/10.7456/1060AGSE/019

Al-Khafaji, Ali & Aziz, Mayce. (2018). Repetition mechanism and its impact in architectural form perception. Iraqi Journal of Architecture and Planning. 11. 10.36041/iqjap.v11i4.147.

Askari, A. H., & Dola, K. B. (n.d.). Influence of Building Façade Visual Elements on Its Historical Image: Case of Kuala Lumpur City, Malaysia. 11.

Askari, A. H., & Soltani, S. (2018). Contribution of Building Façades to Attractive Streetscapes: Study of Two Main Streets in Kuala Lumpur City. Journal of Design and Built Environment, 18(1), 29–40. https://doi.org/10.22452/jdbe.vol18no1.4

Bentley, I. (2011). Responsive environments: A manual for designers. Architectural Press/ Elsevier.

Chan, C.-S. (2012). Phenomenology of rhythm in design. Frontiers of Architectural Research, 1(3), 253–258. https://doi.org/10.1016/j.foar.2012.06.003

Deng, L. (2010). The value of regulating building facades: a case study of masonry ordinances in chicago suburbs. Journal of architectural and planning research, 27(4), 271–286.

Giecewicz, J., & Kwieciński, K. (n.d.). Monotony & Repetitiveness in Architectural Design. 14.

Hossein Askari, A., Dola, K. B., & Soltani, S. (2014). An evaluation of the elements and characteristics of historical building façades in the context of Malaysia. URBAN DESIGN International, 19(2), 113–124. https://doi.org/10.1057/udi.2013.18

Isil Cakci Kaymaz (2012). Landscape Perception, Landscape Planning, Dr. Murat Ozyavuz (Ed.), ISBN: 978953-51-0654-8, InTech, Available from: http://www.intechopen.com/books/landscape-planning/landscapeperception

Kaplan, R. (1984). Impact of urban nature: A theoretical analysis. Urban Ecology, 8(3), 189–197. https://doi.org/10.1016/0304-4009(84)90034-2

Koffka, K. (1963). Principles of Gestalt psychology. New York: Harcourt, Brace & World. (Original work published 1935)

Koseoglu, E., & Onder, D. E. (2011). Subjective and objective dimensions of spatial legibility. Procedia - Social and Behavioral Sciences, 30, 1191–1195. https://doi.org/10.1016/j.sbspro.2011.10.231

Kubovy, M., & van den Berg, M. (2008). The whole is equal to the sum of its parts: A probabilistic model of grouping by proximity and similarity in regular patterns. Psychological Review, 115(1), 131–154. https://doi.org/10.1037/0033-295X.115.1.131

Lynch, K. (1960). The image of the city (33. print). M.I.T. Press.

Metwally, E. (2021). Achieving the Visual Perception and Gestalt Psychology in Sultan Hassan Mosque Building. Open Journal of Applied Sciences, 11(01), 21–40. https://doi.org/10.4236/ojapps.2021.111003

Mouratidis, K. (2021). Urban planning and quality of life: A review of pathways linking the built environment to subjective well-being. Cities, 115, 103229. https://doi.org/10.1016/j.cities.2021.103229

Nan, L., Sharf, A., Deussen, O., Cohen-Or, D., & Chen, B. (n.d.). Conjoining Gestalt Rules for Abstraction of Architectural Drawings. 10.

O'Connor, Z. (2011). Façade Colour and Judgements about Building Size and Congruity. Journal of Urban Design, 16(03), 397–404. https://doi.org/10.1080/13574809.2011.574993

Perera, N. (2002). Indigenising the Colonial City: Late 19th-century Colombo and its Landscape. Urban Studies, 39(9), 1703–1721. https://doi.org/10.1080/00420980220151736

Rezvanpour, N., & Bayat, A. (2017). Determining effective urban design factors within the branding strategy due to brand city spaces and evaluating city spaces by comparing them to the presented factors. A case study of ChaharBagh Avn, Isfahan, Iran. Energy Procedia, 115, 6–17. https://doi.org/10.1016/j.egypro.2017.05.002

Sadeghifar, M., Pazhouhanfar, M., & Farrokhzad, M. (2019). An exploration of the relationships between urban building façade visual elements and people's preferences in the city of Gorgan, Iran. Architectural Engineering and Design Management, 15(6), 445–458. https://doi.org/10.1080/17452007.2018.1548340

Salingaros, N. (n.d.). MonotonousRepetition. 12.

Salingaros, N. (2014). Complexity in Architecture and Design. Oz, 36(1). https://doi.org/10.4148/2378-5853.1527

Salingaros, N. A. (n.d.). The patterns of architecture. 14.

Scott, M. J., & Canter, D. V. (1997). Picture or place? A multiple sorting study of landscape. Journal of Environmental Psychology, 17(4), 263–281. https://doi.org/10.1006/jevp.1997.0068

Shashikala (2015). Building Façade as a Sign: A Study on the Repetitional Monotony of Urban Fabric.

Soycan, A., & Soycan, M. (2019). Perspective correction of building facade images for architectural applications. Engineering Science and Technology, an International Journal, 22(3), 697–705. https://doi.org/10.1016/j.jestch.2018.12.012

Thapa, R. (2018). Rhythm in Architecture: An Aesthetic Appeal. Journal of the Institute of Engineering, 13(1), 206–214. https://doi.org/10.3126/jie.v13i1.20368

Venturi, R. (1977). learning from Las Vegas. London: Massachusetts Institute of technology press.

Xiao, H., Meng, G., Wang, L., & Pan, C. (2018). Facade repetition detection in a fronto-parallel view with fiducial lines extraction. Neurocomputing, 273, 435–447. https://doi.org/10.1016/j.neucom.2017.07.040