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Designing Introvert-Friendly Public Spaces in Malaysia

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Abstract

Public spaces are often designed with extroverted behaviours in mind, overlooking the needs of introverted individuals who prefer quieter, less stimulating environments. In Malaysia, this oversight results in public spaces that fail to cater to introverts, causing discomfort and diminished well-being. Despite this, there is a noticeable lack of research and practical guidelines for creating introvert-friendly public spaces in the Malaysian context. This study aims to address this gap by developing effective design strategies tailored for introverts. The research will identify key spatial features and design elements that promote introvert-friendly environments and propose practical guidelines for their implementation. The findings will raise awareness among architects and urban planners, leading to public spaces that better support introverts' needs, thereby enhancing their comfort and well-being.

Keywords: Introvert-Friendly Design, Public Spaces, Personality and Architecture, Multisensory Environments, Zoning Strategies

Introduction

In contemporary urban societies like Malaysia, the design of public spaces holds significant importance as cities evolve to accommodate diverse social dynamics and working modalities. In this context, understanding the intricate interplay between human needs, preferences, and architectural environments becomes paramount. At the heart of this discussion lies the exploration of human personality, particularly through the lens of Swiss psychiatrist Carl Jung's. Jung categorizes individuals as exhibiting either an extroverted or an introverted tendency, traits that are central to human personality (Petric, 2022). He proposed that the principal distinction between personalities lies in the source and direction of an individual's expression of energy (Petric, 2022). Introverts focus their interest inward, with their thinking, feelings, and actions driven primarily by their internal world; in contrast, extroverts focus their interest outward, engaging with their surrounding environment and responding to external factors rather than their own subjective experiences (Houston, 2019). This conceptualization

underscores the vital role personality plays in shaping one's interactions with architectural spaces, as individuals seek environments that align with their innate tendencies for engagement or solitude (Meyer, 2024).

In a multicultural context like Malaysia, where diverse cultural backgrounds enrich the urban landscape (Muhamad et al., 2023), the need for inclusive design principles becomes even more pronounced. Here, the convergence of various cultural influences presents both challenges and opportunities for architects and urban planners seeking to create spaces that resonate with the populace. Understanding the multifaceted nature of human personality, as influenced by cultural nuances, is thus essential in crafting public spaces that cater to the needs and preferences of all citizens. Moreover, contemporary insights from behavioural theory further illuminate the dynamic relationship between personality and environment, highlighting how architectural design can either facilitate or hinder individual well-being and engagement (Cherry, 2023). For instance, extroverts are inclined to seek open, stimulating environments that facilitate social interaction (Herbert et al., 2023). They might be particularly drawn to creative, avant-garde architectural designs that offer dynamic and engaging experiences (Chiappelli et al., 2021). Conversely, introverts tend to prefer enclosed, quiet spaces conducive to reflection and solitude (Herbert et al., 2023). Research also indicates that exposure to green spaces and well-designed tranquil areas can provide introverts with much-needed opportunities for retreat and relaxation, thereby contributing to their well-being and reducing stress levels (Semeraro et al., 2021). Therefore, acknowledging these differing preferences underscores the importance of considering the distinct needs of both introverts and extroverts in architectural design to optimize their experiences within the built environment.

For many years, the societal promotion of extroversion as an ideal has significantly influenced people's perceptions of personality traits (Gohil, 2020). In Susan Cain's book "Quiet: The Power of Introverts in a World That Can't Stop Talking," published in 2012, she delves into how the extrovert ideal has become deeply ingrained in Western culture as a path to success in various aspects of life, including architectural design (Gohil, 2020). This bias towards extroversion is evident in mainstream design practices, which often prioritize open-plan layouts and bustling social hubs, inadvertently marginalizing introverted individuals and hindering their full participation in public spaces (Engen & Øye, 2022). However, introverts' heightened self-awareness enables them to identify environments within the built environment where they are most productive, emphasizing the importance of creating spaces tailored to introvert-friendly design principles (Gohil, 2020). Thus, there is a need to focus on designing introvert-friendly public spaces in Malaysia to ensure inclusivity and meet the diverse needs of the population.

Fortunately, contemporary architectural design is increasingly recognizing the importance of accommodating the needs of introverts. Recent trends emphasize the creation of spaces that prioritize seclusion, adaptability, and control over external distractions (Glei & Weinstein, 2023). For example, The High Line in New York City is a notable public space that caters to the needs of introverts by offering quiet, reflective, and tranquil environments. The design features ample greenery, secluded seating areas, and pathways that allow for quiet contemplation, making it an excellent case study for incorporating introvert-friendly elements into urban spaces. Additionally, the Vondelpark in Amsterdam showcases successful design

strategies that promote solitude; its extensive tree cover, quiet nooks, and dedicated walking paths provide introverts with an escape from the bustling city life. Another example is the Botanical Gardens in Singapore, which includes sensory gardens designed with calming sounds, diverse plant textures, and peaceful seating arrangements, specifically catering to individuals seeking quietude and reflection. By examining these successful models, architects and planners in Malaysia can draw inspiration for creating inclusive public spaces that address the needs of introverted individuals.

Problem Statement

Motivational Problem

Community public spaces are designed to serve multifunctional purposes, accommodating various activities such as gathering, playing, interacting, relaxing, enjoying nature, and recharging (Dawe, 2021). Ideally, these spaces should be inclusive, reflecting the diversity of the community, including the 51.17% of individuals who identify as introverted in Malaysia (16Personalities, 2024). However, the design of these spaces often disproportionately caters to extroverts, who thrive on interaction and social connections (Ringleb, 2021). Extroverts benefit from these lively, engaging environments that facilitate social interaction (Colgan, 2024), while introverts, who require solitary time to recharge, often find public spaces lacking elements that meet their needs (Ringleb, 2021). This imbalance necessitates a re-evaluation of design principles to ensure inclusivity for all personality types.

An illustrative case is Celes Asoke, a residential development in Bangkok, Thailand, where despite well-provided common facilities, residents seldom utilize them. This indicates a significant issue: the preference for the comfort and privacy of individual living spaces over social interaction suggests that the current design of public areas is ineffective for many residents. Taking example from residential complex, shared amenities like swimming pools and tea bars, which encourage social interactions, can drain introverts' energy (Vivarium, 2023), leading them to retreat to their private units instead of enjoying communal facilities. When public spaces lack introvert-friendly features such as quiet gardens, secluded seating areas, and peaceful walking paths, they fail to engage a substantial portion of the population (Engelhardt, 2023). This lack of inclusivity results in underutilized communal areas and missed opportunities to create versatile, appealing spaces for everyone (Engelhardt, 2023).

As architecture trends continue to prioritize human-centered design, projects like the Park Royal Collection Pickering Hotel in Singapore demonstrate a recognition of the need for solitude and tranquility in urban communities (WOHA, 2024). Besides, Googleplex, Google's Headquarters in California, features open-plan offices, collaborative zones, and communal areas where employees can interact, brainstorm, and socialize; additionally, there are quiet zones, private resting pods, private meeting rooms, and personal workspaces designed for focused, solitary work (Chang, 2019). Similarly, Shanghai Sunrise Polymer Material office, which offers a high level of comfort with diverse spaces, allowing employees to choose between open and semi-private areas, with views of trees to reduce visual fatigue (ArchDaily, 2017). These examples highlight the importance of privacy and flexibility, allowing users to alternate between social engagement and solitude based on their needs.

Despite the recognition of the need for solitude and tranquility in specific settings such as hotels and offices, there remains a notable gap in introvert-friendly design within public

spaces. Many public areas still lack dedicated spaces for introverts to retreat and recharge. Even when community spaces offer quiet corners or seating areas, these provisions are often insufficient or overshadowed by the emphasis on communal activities and social interactions. As a result, introverts may feel overlooked or uncomfortable in these environments, leading to underutilization of public spaces and hindering overall community engagement. Therefore, there is a pressing need to address this gap by integrating introvert-friendly design principles into the planning and development of public community spaces, promoting better utilization and engagement of public spaces.

Research Problem

In the contemporary era of urban development, emphasizing "citizen participation" has become increasingly crucial for effective urban management and administration (Yadegari & Alinaghi, 2020). One key strategy for revitalizing cities and neighbourhoods is fostering "social development and engagement" within public spaces (Yadegari & Alinaghi, 2020). Therefore, prioritizing human elements is essential and must be explored across various sectors. Well-designed public spaces can meet the needs of ordinary citizens and support diverse new activities (Yadegari & Alinaghi, 2020), both indoors and outdoors, shaped by individual community preferences (Kumari, 2018). In response to this heightened awareness, designers today primarily employ the concepts of adaptability and participation to increase user control over the planned environments, catering to their senses of need (Kumari, 2018). Architects and planners are trained to design for many alternative spaces and arrangements of space, which can bring out the best of the user's needs. However, there is a notable gap in the design of public spaces in Malaysia concerning the preferences of individuals with introverted personalities. Current architectural guidelines and design practices predominantly focus on creating vibrant, multi-functional areas that may lead to overstimulation and discomfort for introverts.

The principles of socio-spatial comfort are directly relevant to designing introvert-friendly public spaces in Malaysia. Understanding the dynamics of social and privacy buffers, along with varying proxemics, can inform the creation of environments that cater to the comfort of individuals with different personalities (Lee et al., 2021). Robert Sommer's concept of the personal space bubble is a fundamental element in architectural design (Kumari, 2018). This concept should inform the designation of public spaces to address the psychological needs of individuals. However, this bubble should not be seen as a restrictive shell for introverts but rather as a significant conceptual tool. Spaces should be designed as dynamic and adaptable entities that accommodate varying degrees of commonality and personalization for different users, rather than merely providing enclosed privacy without flexibility and freedom.

Nevertheless, the absence of specific guidelines or standards to accommodate the needs of introverts poses a major challenge to the design of communal areas within densely populated environments that align with their preferences. For decades, the architectural domain has strived to understand the relationship between architecture and human experience to achieve human-centric and sustainable design (Lee et al., 2021). The environmental qualities of public spaces have been assessed using metrics such as thermal, visual, lighting, and acoustic comfort (Lee et al., 2021). By integrating insights from environmental psychology with architectural design, and fostering greater cooperation among stakeholders, it is possible to develop public spaces that provide a sense of belonging and comfort for introverted

individuals. This research aims to address these gaps and offer solutions for designing inclusive public spaces in Malaysia.

Specifically, the research aims to investigate two primary questions. Firstly, it seeks to understand how spatial features and design elements influence the comfort and well-being of introverted individuals in public spaces in Malaysia. Secondly, it explores the effective design strategies that can be implemented to create introvert-friendly public spaces in the country. In alignment with these research questions, the objectives of the study are to identify and analyze the specific spatial features that contribute to creating introvert-friendly environments in Malaysian public spaces. Additionally, the research aims to develop and integrate practical design strategies that promote the creation of such spaces, ensuring they cater to the needs of introverts.

Literature Review

Yadegari (2020) explores the effect of personality traits, particularly introversion and extroversion, on the socialization of public spaces. With cities experiencing rapid growth, attention to "central neighbourhoods" and "citizen participation" has become critical for urban management. The problem lies in public spaces requiring the presence of individuals, yet failing to accommodate the differing needs of introverts and extroverts. Yadegari identifies a gap in public space design, which often favours extroverted behaviour, neglecting the needs of introverts who may require more tranquil, less stimulating environments. This qualitative research uses a multi-disciplinary approach, integrating architecture and environmental psychology. Results reveal the importance of creating diverse environments that accommodate both introverts and extroverts, promoting social engagement and community cohesion. In my research on designing introvert-friendly public spaces in Malaysia, Yadegari's findings are crucial as I seek to balance these varying social interaction needs by creating personalized, adaptable spaces that cater to diverse personality traits.

Gohil (2020) in "Visible Computing" examines how societal norms, favouring extroverted traits, shape educational and workplace environments. The "Extrovert Ideal" challenges introverts, who often thrive in quieter, reflective settings. Gohil highlights the psychological conflict introverts face in environments designed for extroverts. The study identifies a gap in how external stimuli affect introverts, emphasizing the need for spaces that allow non-verbal expressions and cater to reflective behaviours. Using an open-ended survey, Gohil explores how introverted traits can be anthropomorphized into objects, providing key elements for an ideal workplace, such as adjustable furniture and natural light. While this research focuses on workspaces, it offers valuable insights for my public space design in Malaysia, particularly in creating adaptable environments that cater to introverted preferences. The gap in applying these principles to public spaces provides further opportunities for my research.

Kumari (2018) addresses the psychological needs of privacy, personal space, and sense of place in built environments. The study underscores the importance of user-centred design approaches, revealing a gap in effectively translating psychological theories into public space design. This research, primarily centred on healthcare environments, highlights how built environments affect human behaviour, with privacy and personal space playing pivotal roles in how individuals interact with their surroundings. Kumari's findings are relevant to my research on designing introvert-friendly public spaces in Malaysia, as they emphasize the

need to incorporate psychological theories into practical design strategies that cater to individuals' needs for personal space. The gap in applying these principles to broader public spaces suggests further opportunities for exploring cultural influences and adapting these concepts for introverted users in public settings.

Oishi and Choi (2020) examine how introversion and extroversion influence spatial preferences. Their study suggests that extroverts tend to select open, social areas, while introverts favour secluded spaces. This research aligns with my work in designing introvert-friendly public spaces in Malaysia by emphasizing the need for diverse spatial environments that cater to varying personality traits. Oishi and Choi's use of self-reported data and the Big Five personality questionnaire highlights how personality traits influence spatial preferences. However, the study's focus on a U.S. university setting presents a gap in exploring these preferences within varied cultural contexts, such as Malaysia. This offers opportunities to investigate how spatial preferences differ across cultural settings and to design public spaces that meet the needs of introverted individuals while considering cultural influences.

Lee et al. (2021) introduces the concept of socio-spatial comfort, examining how the built environment influences human behaviour and social interactions. Their research focuses on how structural configurations and interior elements shape social dynamics and spatial comfort. The study utilizes a computer-vision based Socio-Spatial Analysis System to visualize spatial dynamics and assess how personality traits, particularly extraversion, correlate with preferences for open or secluded spaces. While Lee et al.'s study focuses on indoor environments, the findings are relevant to my research on designing introvert-friendly public spaces in Malaysia. The concept of socio-spatial comfort and the emphasis on creating diverse spatial options to accommodate different personality traits can inform the design of public spaces that cater to introverts. However, the study's limitations in addressing cultural differences suggest a gap that my research can address by incorporating Malaysia's cultural context into the design of public spaces for introverts.

Conceptual Foundations for Introvert and Extrovert Space Design

Introversion and Extroversion

Personality traits significantly shape how individuals perceive and interact with their environment, influencing their preferences for social interaction and space usage (Satchell et al., 2021; Saripalli, 2022). In designing introvert-friendly public spaces, it is essential to address these diverse psychological needs. Introverts, for instance, typically require more personal space and solitude, often withdrawing into their own "bubble" (Yadegari & Alinaghi, 2020; Meyer, 2024). Extroverts, on the other hand, thrive on social interaction and seek environments that allow for constant engagement with external stimuli (Meyer, 2024). This contrast between introverts and extroverts highlights the importance of creating inclusive spaces that cater to the differing needs of both groups, fostering psychological well-being and community cohesion (Berto, 2019).

Multisensory Architecture for Introverts

Given that introverts are more susceptible to overstimulation, multisensory architecture becomes an effective approach to creating spaces that balance sensory input and comfort. Research shows that introverts often experience intense reactions to external stimuli, such as sounds, smells, or textures, which can lead to physical or emotional discomfort (Anna

Marzvanyan & Ali F. Alhawaj, 2023). Inspired by the therapeutic concept of Snoezelen rooms, which utilize multisensory environments (MSE) for individuals with developmental impairments, designers can create public spaces that offer controlled sensory experiences (Gohil, 2020). Incorporating soothing elements like soft lighting, calming sounds, and pleasant scents can provide introverts with a rejuvenating environment while promoting relaxation and emotional well-being (Bridges & Schendan, 2019). This approach helps ensure that public spaces are comfortable and accommodating for individuals with varying sensory needs.

Zoning for Different Personalities

Architectural zoning can further enhance the inclusivity of public spaces by catering to both introverts and extroverts. By implementing the concept of four distinct zones—Private/Alone, Private/Together, Public/Alone, and Public/Together—designers can create environments that balance solitude, collaboration, and social interaction (CMBA Architects, 2020). For instance, Private/Alone zones offer secluded spaces for reflection, while Public/Together zones encourage community interaction and collective activities. This zoning approach provides flexibility in accommodating diverse social needs and preferences.

Additionally, incorporating Edward Hall's concept of proxemics, which defines appropriate interpersonal distances, allows designers to create spatial arrangements that respect the personal space needs of introverts (Lee et al., 2021). Thoughtfully arranged furniture and physical barriers can help create quiet, secluded areas where introverts can retreat without feeling overwhelmed by social interaction. This strategy ensures that public spaces are adaptable to a wide range of social dynamics, offering comfort and usability to all personality types.

Conceptual Framework

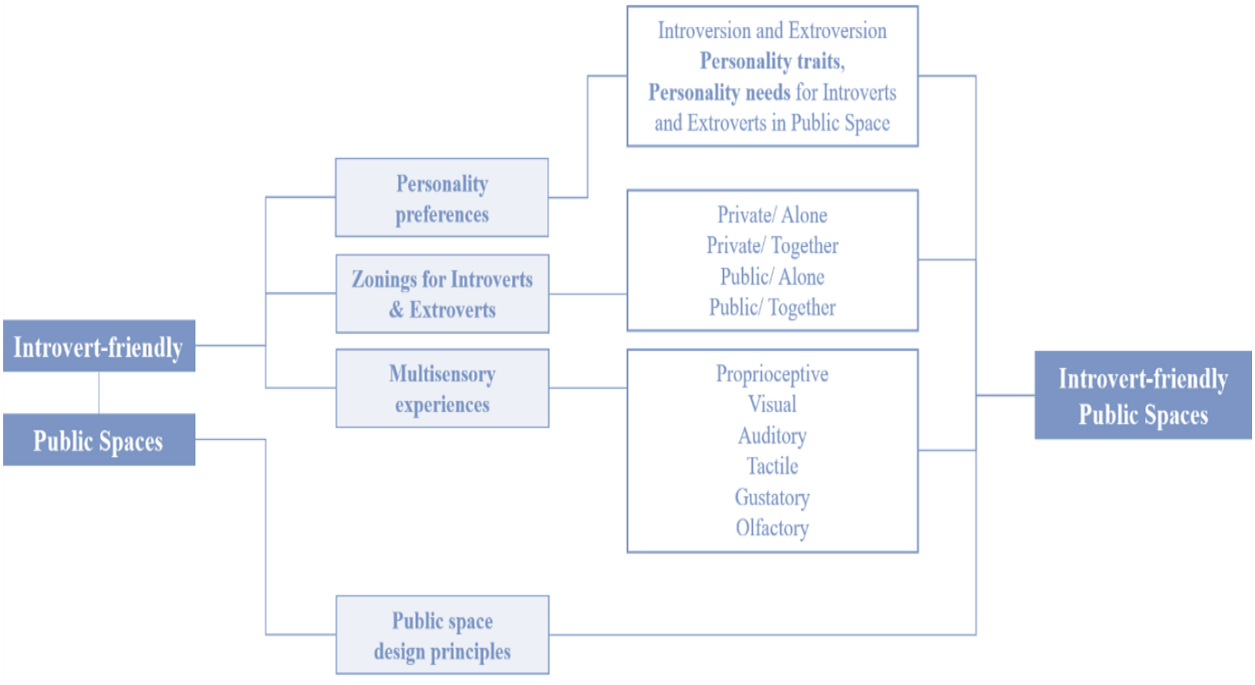

Figure 1: Conceptual Framework of Introvert-friendly Public Space

The conceptual framework for this research aims to provide a structured approach to designing introvert-friendly public spaces by integrating insights from personality psychology, multisensory architecture, and zoning strategies. The first component of the framework involves a deep understanding of the distinct needs and preferences of both introverts and extroverts. By acknowledging these differences, architects can create public spaces that accommodate varying degrees of social interaction and personal solitude, ensuring inclusivity and comfort for all users.

The second component involves implementing zoning strategies to create distinct areas within public spaces that cater to different personality types. This strategy considers the varying demands of introverts by classifying areas according to privacy and social engagement. Distinct zoning provides introverts with the flexibility to choose environments that match their social comfort levels, thereby enhancing their well-being and satisfaction. The concept of proxemics, which defines interpersonal distances for comfortable social interactions, is also integrated into this zoning approach to ensure that personal space needs are respected.

The third component emphasizes the importance of sensory experiences in shaping how individuals interact with their environment. Drawing inspiration from Snoezelen rooms, which offer therapeutic benefits through controlled sensory stimuli, public spaces can incorporate elements such as calming lighting, soothing sounds, and pleasant scents. These sensory-rich environments can help introverts manage overstimulation and create spaces that enhance their well-being. Integrating multisensory design principles ensures that public spaces are not only visually appealing but also cater to the sensory sensitivities of introverted individuals.

Alongside these components, key design principles – accessibility, safety, functionality, and aesthetic appeal are crucial for creating public spaces that are welcoming, practical, and engaging. By integrating these principles with the framework components, architects can create inclusive, comfortable, and versatile public spaces that meet diverse user needs.

Conclusion

The growing recognition of the diverse needs within urban environments underscored the imperative to design public spaces that cater to all personality types. This research highlights a critical gap in current public space design in Malaysia. This research highlights a critical gap in current public space design in Malaysia: the underrepresentation of introvert-friendly features. Despite the increasing awareness of the importance of human-centered design, many public spaces still favour extroverted preferences, resulting in environments that may not fully support introverts' need for solitude and reflection.

The findings of this study demonstrate that effective public space design must account for the unique needs of introverted individuals. By applying the theoretical framework established in this research, which integrates insights from personality psychology, multisensory architecture, and zoning strategies, urban planners and architects can create environments that balance social interaction with opportunities for solitude. For instance, introducing zoning strategies in Malaysian parks that categorize areas into Private/Alone and Public/Together can ensure that introverts have the opportunity to engage with nature while also having access to quieter, more reflective spaces. These practical applications underscore

the importance of considering personality diversity in the design process, ultimately leading to more inclusive public spaces that enhance well-being for all users. Key recommendations include:

Spatial Features and Design Elements
The research underscores the importance of incorporating features such as quiet gardens, secluded seating areas, and peaceful walking paths. These elements are crucial for providing introverts with spaces to retreat and recharge, thus promoting a more inclusive environment.

Zoning Strategies
Implementing zoning strategies that categorize spaces into Private/Alone, Private/Together, Public/Alone, and Public/Together zones allow for a flexible environment that accommodates varying social preferences. This approach ensures that both introverts and extroverts can find spaces that suit their needs, enhancing overall satisfaction and usability.

Multisensory Design
Drawing from the principles of multisensory architecture, the integration of calming lighting, soothing sounds, and pleasant scents can mitigate overstimulation and enhance the sensory experience for introverted individuals. This approach, inspired by therapeutic environments, offers valuable insights into creating spaces that support emotional well-being.

In conclusion, this research advocates for a paradigm shift in public space design towards greater inclusivity and sensitivity to diverse personality traits. By addressing the specific needs of introverts through thoughtful design and strategic planning, architects and urban planners can foster environments that support the well-being and engagement of all individuals. The recommendations provided serve as a foundation for future research and practice, aiming to create public spaces that truly reflect the diversity and complexity of the community.

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