



The Influence of Bali Garden-Themed Murals on Visitor Interactivity at Living World Mall Bali

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Abstract

Murals in the modern era can create interactivity with visitors (users) as a form of participatory description of societal phenomena, particularly murals at Living World Mall Bali (LWMB), which use the Bali garden concept. The aim of this study is to describe interactivity, visitor responses, and the implementation of the Bali garden concept in the murals at LWMB. To achieve these goals, the researcher applies theories and approaches from interactivity, aesthetics, color psychology, and education. The research method is descriptive qualitative, in the form of a case study. Research data include visitor behavior and responses, as well as the construction of murals with the Bali garden concept. Data collection techniques include observation, interviews, and document studies. Data analysis uses an interactive model, consisting of data reduction, data presentation, and verification/conclusion drawing. The research findings contain descriptions of visitor interactivity with the murals, including behaviors such as taking photos, appreciating aesthetic value, using the mural as an inspirational image medium, an information medium, a medium for conveying moral messages, and an educational medium by observing, touching, and documenting. Visitor interactivity with the murals at LWMB serves as a medium for inspiration, a means of conveying moral messages to promote cultural and environmental values of Bali, and an educational medium in the arts, fostering psychological comfort, a sense of brotherhood, and a spirit of mutual cooperation.

Keywords: mural, Bali garden, interactivity, LWMB

Introduction

Bali, one of Indonesia's most prominent tourist islands, is deeply influenced by Indian culture, especially through Hindu teachings. Often referred to as the "Island of a Thousand Gods," Bali is dotted with temples in every district and village, making it a favored destination for tourists seeking natural, cultural, and shopping experiences. Among the key attractions in Bali is Living World Mall Bali (LWMB), a unique fusion of shopping and culinary tourism with a distinct Balinese cultural ambiance.

LWMB offers a variety of Nusantara and Asian dishes in its food court, a concept that reflects its vision as a "home living & eat-retainment" mall. According to an interview with the management team (2024), the mall integrates Balinese elements such as an archway, fountain, and decorative ornaments, creating a culturally immersive experience. In addition, LWMB is designed with an environmentally friendly approach, incorporating energy-efficient architecture, solar panels, LED lighting, and a water management system that recycles wastewater for irrigation and pond maintenance.

The mall's interior design is influenced by visual communication design, encompassing visual appearance, art, technology, and socio-cultural elements. This includes fundamental visual art concepts such as composition, color, layout, typography, and illustration, integrated with technologies like graphic reproduction and photography (Preble, Duane, & Sarah, 1985; Feldman, 1987). Visual communication design emphasizes two-dimensional spaces, often with varying complexity (Freddy Adiono Basuki, 2000). One of the most notable features of LWMB's interior is its murals, which not only serve as aesthetic elements but also foster interactivity among visitors.

Murals, as large paintings embedded within architectural spaces, are distinct from traditional paintings due to their integration with the structure and their role in enhancing the space's functionality and aesthetic value. In Indonesia, murals have gained popularity, especially among those unfamiliar with visual arts. They contribute to creating an environment that invites active engagement, a feature that is particularly evident in LWMB's use of murals.

According to Afrinda et al. (2020), interactivity in a medium like a mural is supported by two key concepts: "users to system," where visitors interact with the mural as a system, and "users to users," where communication occurs among visitors within the mural space. Interactivity emphasizes participation, control, and activity, enabling visitors to engage with the murals in a meaningful way (Bucy, 2004).

The murals at LWMB are designed with the Bali garden concept in mind, a traditional Balinese-style garden that features geometric patterns and elements such as water, stones, and plants. This concept, as explained by mural designer I Putu Gede Pageh Usianto (2024), serves not only as a visual stimulus but also as a

symbol of Bali's tropical landscape, making the mall's design easily identifiable as part of Bali's cultural identity.

The murals throughout LWMB, including those in the food court, restrooms, and elevator areas, are aligned with the Bali garden theme, which incorporates flowers, deer, butterflies, and various birds. These elements symbolize beauty, harmony, growth, and positive imagery, offering a stark contrast to the often-negative perceptions of restrooms as untidy or unpleasant spaces. The application of these cultural symbols is intended to create a more positive and engaging experience for visitors.

Given the significance of these murals, particularly in the context of the Bali garden concept, a deeper exploration of how visitors interact with them is warranted. This research aims to examine how the visual communication design of murals in LWMB influences visitor interactivity, providing valuable insights into the role of murals in public spaces. The research question that arises from this exploration is: **How do visitors interact with the murals at LWMB, particularly those featuring the Bali garden concept?**

Method

The research method employed in this study is a descriptive qualitative approach in the form of a case study, involving different respondents for each research schedule. Respondents were selected using purposive sampling, a technique that ensures the inclusion of individuals who are directly engaged with the murals at LWMB. This method enhances the validity of the findings by targeting those who have interacted with the murals, providing insights from individuals with relevant experiences. Visitors were chosen based on their frequency of visits, active engagement with the murals, and diverse demographic backgrounds, which helps provide a well-rounded understanding of visitor behavior and responses.

According to Sugiyono (2019), qualitative research is a method used by researchers to explore knowledge or theories at a specific time. This approach aims to understand a phenomenon within its natural social context, emphasizing a deep communicative interaction process between the researcher and the phenomenon being studied. In this case, the phenomenon under investigation is the interaction of visitors with the murals at LWMB. The researcher employs an interpretive paradigm to analyze data provided by the visitors through direct observation and informal interviews, allowing for a nuanced understanding of visitor experiences.

One potential bias in this study is the researcher's interpretation of visitor behavior and responses. Since the researcher's observations and interpretations are subjective, there may be an inherent bias based on personal perspectives or expectations. To minimize this bias, triangulation was used by incorporating

multiple data sources, such as observations, interviews, and participant feedback, ensuring a more balanced and comprehensive interpretation.

Moreover, to avoid influencing respondents' behavior, all observations were conducted discreetly, and open-ended interview questions were used to encourage unprompted responses.

The case study approach is particularly suited to this research because it allows for an in-depth exploration of the specific context of LWMB, which is an exceptional and unique setting. By focusing on this case, the researcher can capture the intricacies of how visitors interact with the murals in a real-world environment, providing insights that may not be generalizable to all mural sites but are deeply relevant to this particular case. The case study design supports a detailed understanding of visitor engagement, making it an ideal choice for studying this complex, context-dependent phenomenon.

The approaches used in this research include mural, interactivity, aesthetics, education, inspirational imagery, behavioral psychology, and color psychology, all in relation to the murals at LWMB. These approaches are outlined below:

1. **Mural Approach:** Murals on walls enhance the artistic and aesthetic value of architectural or interior spaces. As an effective communication tool, murals convey messages to a broad audience, often carrying deeper meanings beyond their visual appeal. In this study, murals are analyzed as a medium for visual communication, reflecting both artistic intentions and cultural values.
2. **Interactivity Approach:** This approach is based on environmental behavior, specifically behavior setting. Empirical observations were conducted to document and analyze visitor interactions with the murals. The murals themselves, particularly those incorporating a Bali garden concept, are designed to stimulate visitor responses. Behavioral patterns were mapped to assess the level of interactivity with the murals, helping to understand how the physical environment influences visitor behavior.
3. **Aesthetic Approach:** The aesthetic approach concerns the creation, appreciation, and critique of art in human activity. In this study, the researcher examines the visual elements used in the murals, such as color, form, and composition, and how these elements convey philosophical messages tied to the Bali garden theme. Aesthetics here serve to explore how art influences perception and engagement with the space.
4. **Educational Approach:** Murals at LWMB are not merely decorative but serve as a tool for education. The educational approach considers how murals can influence visitors' understanding of fine arts and convey messages to the audience. This research examines how the murals

contribute to the visitors' learning and cultural enrichment, in alignment with the educational objectives of the LWMB space.

5. **Inspirational Imagery Approach:** Murals often serve as a medium for conveying the themes and ideas of the artist. By studying the background and inspiration behind the Bali garden-themed murals, the researcher investigates how these elements inspire visitors and evoke emotional or intellectual responses.
6. **Behavioral Psychology Approach:** This approach examines how individual and group behaviors are influenced by the murals and the surrounding environment. Behavioral psychology in this context is concerned with how the murals, as part of the environment, shape visitor interactions and responses. By studying visitor behaviors, the research investigates how external stimuli such as art can affect psychological responses.
7. **Color Psychology Approach:** Color plays a critical role in influencing human behavior and emotional responses. The study examines how the various colors used in the murals—red, blue, yellow, green, orange, black, white, brown, purple, and pink—affect visitor activity and perception in the Bali garden-themed space at LWMB. Different colors can evoke specific emotional responses, influencing visitor engagement with the environment.

Result

The study examines visitor interactivity with the murals in the LWMB (Lifestyle Mall with Bali) designed with the Bali Garden concept. The interactivity is analyzed through specific indicators, including visitor participation, control, and activity within the space. It explores how visitors engage with the murals in terms of appreciation, documentation, and communication of messages.

1. Visitor Behavior

Visitor engagement with the murals in LWMB occurs in various forms, with the following patterns observed:

- **Photography and Social Media Interaction:**
 - X% of visitors engage in taking photographs or selfies in front of the murals.
 - Visitors often upload these photos to their personal social media platforms.
 - Various poses and interactions, including group photos, are observed.

- **Restroom Area:** Mirror selfies with murals and interior decor as the backdrop are common.
- **Physical Interaction:**
 - Visitors engage in tactile interactions with the murals, such as touching them to explore textures or closely examine design details.
- **Locations of Interaction:**
 - **Food court Area:** Visitors frequently engage with murals depicting Balinese daily activities.
 - **Lift Area:** Visitors appreciate murals showcasing Bali's cultural rituals.
 - **Restrooms:** Visitors interact with murals in the restroom areas, which integrate the Bali garden theme to enhance the space's aesthetic appeal.

2. Aesthetic Appreciation

Visitors' appreciation of the murals in LWMB is centered on their aesthetic or artistic values, with key elements including:

- **Themes:**
 - **Bali Garden Theme:** Found in the restroom murals, featuring flora and fauna native to Bali.
 - **Balinese Cultural Theme:** Displayed in food court and lift areas, featuring Balinese women in traditional attire or daily life scenarios.
 - **Cultural Connection:** The murals bridge architecture and cultural motifs, enhancing the overall ambiance.
- **Aesthetic Elements:**
 - Visitors appreciate visual elements such as form, color, and motifs.
 - Murals serve as an aesthetic focal point, elevating the ambiance in everyday spaces (e.g., food court and restroom areas).

3. Color Elements in the Mural

Color plays a significant role in the murals, impacting visitor experience and perception:

- **Psychological Impact:**
 - **Red:** Symbolizes courage and excitement (food court area).
 - **Blue:** Creates calmness and tranquility (restrooms).
 - **Yellow:** Evokes happiness and energy (food court).
 - **Green:** Promotes relaxation and balance (food court and restroom).

- **Orange:** Conveys warmth and optimism (food court).
- **Black and White:** Provide contrast and elegance (general mural effects).
- **Brown:** Represents earthiness and stability (connecting with nature).
- **Pink and Purple:** Contribute comfort and wisdom, particularly in women's restrooms.
- **Cultural and Symbolic Use:**

The colors are carefully chosen to reflect Balinese culture and nature, enhancing both aesthetic and psychological effects.

4. Motif Elements in the Mural

Motifs in the murals include traditional Balinese design elements, contributing to their educational and cultural significance:

- **Cultural Motifs:**

The murals incorporate motifs such as fabrics, clouds, plants, and animals, typical of Balinese art, reinforcing the connection to Bali's cultural heritage.

- **Educational Value:**

The murals serve as a tool for preserving Balinese culture, which can inspire younger generations to understand and appreciate cultural traditions.

5. Inspiration Media

Visitors use the murals as sources of inspiration, influencing their own creative works:

- **Artistic Creation:**

Many visitors, especially artists, draw inspiration from the mural's themes and elements for their own projects, such as murals, paintings, graphic design, and photography.

- **Creative Exploration:**

The Bali garden concept and cultural themes in the murals provide new perspectives and ideas for creative expression, particularly for visual artists.

6. Information Media

- **Learning and Knowledge Acquisition:**
- Visitors use the mural to expand their understanding of artistic elements, design principles, and cultural values. This engagement fosters a deeper appreciation for visual arts and design.

7. Moral Message Delivery Media

- **Preservation of Culture and Environment:**

The murals convey important moral messages related to the preservation of Balinese culture and the natural environment. The depiction of Bali's flora and fauna, along with cultural motifs, underscores the importance of environmental and cultural sustainability.

8. Educational Media

- **Educational Role:**

The murals serve as an effective educational tool by communicating cultural values, social norms, and artistic principles to visitors. Through observation and engagement, visitors acquire insights into Balinese culture and the significance of preserving it for future generations.

Discussion

Based on the analysis of research data, it was found that visitors engage with the Bali garden-themed mural at LWMB through actions such as taking photos, appreciating the aesthetic or artistic value, and creatively imagining the mural's design. This interaction includes behaviors like photographing, touching, and engaging in discussions with one another about the mural. Such findings resonate with Afrinda et al. (2020), who argue that interactivity within a medium is supported by specific indicators. The first indicator, "users to system," suggests that visitors (users) interact with the medium—here, the mural at LWMB (system)—via the features provided by the mural. The second indicator, "users to users," refers to communication among users, in this case, visitors discussing the mural, its artistic value, and the Bali garden theme.

Visitor interactivity reflects active participation with the mural, aligning with Danesi's (2009) view that interactivity is at its peak in the digital age. According to the Dictionary of Media and Communications, interactivity is "the ability to participate in, or control, media products, rather than passively receiving them." This definition captures the essence of visitor engagement with the mural, as they don't simply observe but actively appreciate and interpret its elements.

The Bali garden-themed mural at LWMB also functions as a source of inspiration, information, and moral guidance. Visitors not only gain new perspectives but also use the mural as a reference for creative inspiration. It provides valuable insights into Balinese culture and nature, while simultaneously delivering moral messages that can be applied to everyday life. Additionally, the mural acts as an educational tool, especially in visual arts, further enhancing its role as an informative and interactive medium.

This dynamic is in agreement with William, Rice, and Rogers (in Ruggiero, 2000), who suggest that interactivity strengthens the core principles of active user gratification theory. This theory highlights participant involvement, the ability to control and exchange roles in communication, and the benefits of mutual discourse. Their view suggests that the mural's role transcends passive observation, positioning it as a medium that fosters active engagement and knowledge exchange. These elements of mutual discourse—control, participation, and role exchange—fit into three levels of interactivity: face-to-face conversation (the highest degree of interactivity), interactions between users and a system (a moderate degree of interactivity, where content can be manipulated), and interactions with a system that limits content change (a low degree of interactivity). Visitors to the mural exhibit a combination of the first two levels of interactivity, engaging in discussions and manipulating their perceptions of the artwork.

However, despite the mural's interactive qualities, certain challenges regarding visitor engagement and its overall effectiveness need to be considered. While the mural promotes creative participation, some visitors may only engage at a superficial level, such as taking photos for social media without deeper reflection on its content. Furthermore, the ability of the mural to cater to a wide variety of audiences—from art enthusiasts to casual observers—may be limited by factors such as language barriers or differing cultural backgrounds. These challenges indicate that while the mural serves as an interactive and educational medium, its effectiveness in fostering deep engagement could be enhanced through more personalized or guided experiences, such as interactive tours or augmented reality (AR) features that explain the mural's significance in real-time.

In light of these challenges, it is crucial to explore practical implications for similar mural projects. To foster deeper engagement, future murals could incorporate elements that encourage more than passive interaction, such as touch-sensitive features, QR codes linking to cultural explanations, or even artist-led workshops. Additionally, organizing community events around the murals—such as mural-making workshops, cultural performances, or interactive discussions—could deepen visitors' connections with the art and its message. These efforts could mitigate the limitations of engagement and allow visitors to experience a more immersive, participatory form of interaction.

This aligns with the findings of I Nyoman Larry Julianto and I Wayan Agus Eka Cahyadi (2020), who observe similar interactivity between students and visitors toward illustrations in public spaces like the LWMB. As murals are a form of illustration, this study builds on the understanding of how illustrations (murals) can serve as both artistic expressions and interactive educational tools, enhancing visitor engagement through visual communication. Therefore, further research could explore how various forms of interactivity, from passive viewing to active participation, influence the educational and cultural impact of murals.

In conclusion, the mural at LWMB not only embodies the theoretical frameworks of interactivity, but also raises important considerations about how such art can be made more effective in engaging visitors on a deeper level. To maximize the impact of similar projects, it is essential to integrate both technological and community-based approaches that encourage sustained, meaningful interaction with the artwork.

Conclusion

Visitor interactivity includes behaviors or actions such as taking photos, appreciating the aesthetic value or beauty of the murals, seeing them as inspirational images, sources of information, moral messages, and educational media. This interactivity refers to visitors' actions toward murals with the Bali garden concept. Visitor interactivity involves actions like observing, touching, and documenting through photos, selfies, and mirror selfies, whether for personal enjoyment or with other visitors. Such behaviors provide individual and group satisfaction. The interactivity aligns with themes of a garden and Balinese culture. Each room, especially the areas in front of and within the restrooms, is designed with a Bali garden concept, featuring plants and animals unique to Bali, reflecting beauty, harmony, freshness, growth, and a positive image. Visitors enjoy colors like red, blue, yellow, green, orange, black, white, brown, purple, and pink, which add aesthetic value and offer psychological comfort to visitors.

References

- Afrinda, R. A. A., Irawan, B., & Boer, K. M. (2020). Interaktivitas Website Belimbing. Id Sebagai Media Komunikasi Dalam Meningkatkan Sistem Pelayanan Masyarakat Di Kelurahan Belimbing Kecamatan Bontang Barat Kota Bontang. *eJournal Ilmu Komun*, 8(1), 88-102.
- Andre Oliver, 2022, Psikologi Warna : Apa Itu Manfaat, Jenis dan Makna Warna, Serta Cara Memilihnya, <https://glints.com/id/lowongan/psikologiwarna/>.
- Asthararianty, Pribadi Widodo, Agung Ekobudiwaspada. (2016). Mengungkap Nilai-nilai Simbolis di Balik Warna Tradisional Bali Nawa Sanggha melalui Rancangan Desain Buku, *NIRMANA*, Vol. 16, No. 1.
- Bucy, E. (2004). Interactivity in Society: Towards a Theory of an Elusive Concept. Paper presented at Conference Papers – International Communication Association.
- Creswell, J. W. (2014). *Research design pendekatan penelitian kualitatif. Kuantitatif, dan Mixed*. Yogyakarta: Pustaka Pelajar.
- Danesi, Marcel. (2009). *Dictionary of Media and Communication*. Armonk, New York London, England: M. E. Sharpe, Inc.
- Darmaprawira. (2002:32-34). "Pengertian Warna dan Tekstur". *Jurnal (Online)*, (<http://repo.isi-dps.ac.id/>).
- Destri Natalia, Elsa Magdalena, Andry Pranata, Nicolhas Jurdy Wijaya. (2022). *Filsafat dan Estetika Menurut Arthur Schopenhauer*. Vol.3 No.2. 61.
- Feldman, Edmund Burke, (1987), *Varieties of Visual Experience*, Prentice Hall, Inc., Englewood Cliffs, N.J.
- Freddy Adiono Basuki. (2000), *Komunikasi Grafis untuk Sekolah Menengah Kejuruan Bidang Keahlian Seni Rupa dan Kriya*, Penerbit Pusat Pembukuan Departemen Pendidikan Nasional, Jakarta.
- Julianto, I Nyoman Larry dan Cahyadi, I Wayan Agus Eka (2020). Interaktivitas Ilustrasi pada Ruang Belajar Siswa SD Kelas 1-3 di Bali. *Jurnal Panggung* V30/N4/12, hal 589-604.
- Kamurahan S R., Judy., Octavianus. (2014). Studi Persepsi Masyarakat Terhadap Estetika Desain Fasade Bangunan Dengan Pendekatan Teori Subyektif. *Media Matrasain*. Volume 11, No.2.
- Mahmoudi, Mohadeseh. (2012). *Physical Attributes Of Streetscape In The Inner City Of Kuala Lumpur: Case Study Of Bukit Bintang Street And Tun Perak Street*. Disertasi Dipublikasikan. Kuala Lumpur: University Of Malaya.
- Milles, M.B & Huberman, A. (1992). *Analisis data kualitatif*. Jakarta: penerbit Universitas Indonesia.
- Masruddin, Hartina, S., Arifin, M. A., & Langaji, A. (2024). Flipped learning: facilitating student engagement through repeated instruction and direct

- feedback. *Cogent Education*, 11(1), 2412500.
- Masruddin, M., Amir, F., Langaji, A., & Rusdiansyah, R. (2023). Conceptualizing linguistic politeness in light of age. *International Journal of Society, Culture & Language*, 11(3), 41-55.
- Muthmainnah Mursidin1 dkk., (2023). Pembuatan Mural Sebagai Sarana Pengembangan Seni Visual di Sma Negeri 18 Makassar. *Jurnal Pedamas (Pengabdian Kepada Masyarakat) Volume 1, Nomor 2.* (hal 275-279).
- Nababan, Ryan Sheehan. 2019. "Karya Mural Sebagai Medium Mengkritisi Perkembangan Jaman." *Studi Kasus seni Mural Karya Young Surakarta.*
- Nuari, dkk, (2023). Pengaplikasian seni melalui mural edukasi sebagai sumber pengetahuan terhadap masyarakat di kelurahan kutawaru kabupaten cilacap. *Jurnal Bakti Masyarakat Indonesia*, Vol. 6, No. 1, Mei 2023, Hal. 83-90.
- Nurmasari, Shofiyah. (2008). Tesis: Hubungan Media Ruang Luar (Menggunakan Pencahayaan buatan) dengan Kualitas Visual Koridor di malam hari Menurut Persepsi Masyarakat (Studi Kasus Koridor Jalan Pahlawan Semarang), Universitas Diponegoro, Semarang.
- Wicandra, O. B. (2005). Berkomunikasi secara visual melalui mural di Jogjakarta. *Jurnal Desain Komunikasi Visual Nirmana*, 7(2).
- Pujiriyanto. (2005). *Desain komunikasi visual Komputer*. Yogyakarta : ANDI.
- Purna, I Made. (2010). Apresiasi Kearifan Lokal Dalam Pembangunan Kebudayaan. Dalam *Jurnal Inana Budaya*, edisi 15/VIII/2010. SSN: 1410-5195.
- Remawa, dkk. (2012). Karakter dan Intensitas "Warnabali" Konsep dan Maknanya. *Jurnal Seni Budaya Mudra Vol. 27 – 1 Januari 2012*. Denpasar: Institut Seni Denpasar
- Riswandi, *Psikologi Komunikasi*, (Yogyakarta: Graha Ilmu, 2013), 39-45.
- Ruggiero, Thomas E. (2000). Uses and Gratifications Theory in the 21st Century. *Mass Communication & Society*, 3 (1), 3 - 37.
- Salasi, Eighteen. (2020). *Seni Rupa Smp: Seni Lukis, Seni Patung, Seni Grafis, Dan Pameran*. Malang: Ahlimedia Press.
- Sancaya, I.M.W., Swandi, I.W., dan Artawan C.A. (2022). Perancangan Stock Ilustrasi Bertema Beach Holiday Di Florto Studio. *AMARASI: JURNAL DESAIN KOMUNIKASI VISUAL*, 3(2), 123-131.
- Sagala, S. 2010. *Konsep dan Makna Pembelajaran*. Bandung: Alfabeta.
- Sidik, Fajar dan Aming Prayitno. (1979:26). *Pendidikan Kesenian dan Rupa II*. Jakarta: Desain Elementer.
- Sugiyono. (2019). *Metodelogi Penelitian Kuantitatif dan Kualitatif*, R dan D. Bandung: ALFABETA.
- Susanto, Mikke. (2002). *Diksi Rupa*. Yogyakarta: Kanisius.
- Susanto, Mikke. (2011). *Diksi Rupa Kumpulan Istilah dan Gerakan Seni Rupa*. Yogyakarta dan Bali: Dicti Art Lab dan Djagad Art House.
- Suyanto, M. (2004). *Aplikasi Desain komunikasi visual Untuk Periklanan*.

Yogyakarta: Andi Offset.

Syamsiar, Cia, (2009), *Bentuk dan Strategi Perupa-an Mural di Ruang Publik*,
Brikolase, 1(1), 34- 35.

Wicandra, O.B.(2005). *Berkomunikasi Secara Visual Melalui Mural di Jogjakarta*.
Jurnal nirmana, 7(2),126-133.