

Article

Street Puppet Theatre Shows on the Façades of Commercial Buildings as a Novel Stimulator for Social Gatherings in Smart Cities

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Abstract: This study investigates the innovative use of street puppet theatre performances on the façades of commercial buildings to stimulate social gatherings in smart cities. This research investigates the impact of a unique musical puppet show held throughout the 2024 holiday season in the well-known shopping mall El Corte Inglés in Madrid, Spain. This study utilises both quantitative and qualitative methodologies, such as space syntax analysis and empirical observations. It uses the UCL Depthmap 10 software program to assess urban morphology and identify integrated and segregated areas. Observations and video recordings were conducted to analyse social gatherings and behaviours during the performances. The findings reveal that these performances attract diverse audiences and foster social engagement, transforming commercial façades into vibrant public spaces. The study concludes that such innovative uses of urban architecture can significantly enhance the sociability of detached and segregated urban spaces. The research demonstrates that this particular dynamic façade not only fosters social sustainability by creating lively urban spaces but also contributes to economic sustainability by attracting potential customers to commercial centres. This research advances the discourse on smart city development and public space utilisation, offering valuable insights for urban planners and policymakers on leveraging interactive urban façades to enhance public engagement and revitalise underutilised spaces.

Keywords: urban façade; social interactions; shopping centre; commercial building; street theatre show; social gathering; urban architecture; smart cities; space syntax; urban landscape



Citation: Askarizad, R.; Dastoum, M.; Garau, C. Street Puppet Theatre Shows on the Façades of Commercial Buildings as a Novel Stimulator for Social Gatherings in Smart Cities. *Buildings* **2024**, *14*, 2950. <https://doi.org/10.3390/buildings14092950>

Academic Editor: Yung Yau

Received: 12 August 2024

Revised: 16 September 2024

Accepted: 17 September 2024

Published: 18 September 2024



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1. Introduction

The metamorphosis of urban landscapes driven by technological advancements and the establishment of smart cities plays a significant role in fostering the initiation of social activities within urban public spaces [1–4]. This evolution is attributed to the meticulous design of the built environment, which enhances its aesthetics and attractions, thereby encouraging community engagement and social interactions among people [5,6]. As urban landscapes evolve, attention has increasingly turned towards the transformative potential of architectural façades in shaping the dynamics of public spaces [7–9]. An urban façade refers to the exterior face of a building that interacts with the public space in an urban environment [10,11]. It is an important element in urban design and architecture, influencing the aesthetic, social, and functional aspects of the cityscape [12–14]. Consequently, the adoption of innovative technologies such as dynamic façades, which include electronic screens, has emerged as a driving force behind the revitalisation of urban landscapes, particularly in commercial hubs such as shopping malls [15–17].

The main aim of this study is to analyse an exceptional urban façade that presents a unique opportunity to stimulate social gatherings and attract audiences inside the premises

of a well-known shopping mall in Madrid, the capital of Spain. El Corte Inglés is a renowned Spanish department store chain and shopping centre that occasionally organises various events and activities, including cultural and entertainment events. During Christmas and New Year's celebrations in 2024, this store organised and held a puppet street musical theatre performance on the façade of its branch located in the vicinity of Sol Plaza. In fact, the concept of performing a musical street puppet show on the façade of a commercial building brought an intriguing, creative, and unique form of entertainment aimed at attracting audiences and engaging society. Employing urban architecture as a platform for showcasing artworks can enrich the overall experience of people and offer a distinctive mode of entertainment for the public. These shows often blend art and technology in the context of urban spaces to cultivate a vibrant and captivating atmosphere.

This type of event may also enhance the cultural diversity of a community and provide a unique opportunity for people to engage with public spaces. Likewise, it has the potential to appeal to a wide range of audiences, including families, children, tourists, and locals, making it a versatile source of entertainment. However, the success of such a show depends on various factors, including the quality of the performance, the integration of technology, and the overall design. Additionally, considerations for safety, accessibility, and community impact are crucial in planning and executing such events to make them a memorable and enjoyable experience. Through the innovative use of space, the fusion of art, architecture, and technology, along with the art of storytelling and musical performance, this show not only entertains but also transforms an ordinary space into an extraordinary setting, full of social life.

The concept of smart cities revolves around integrating technology into urban planning and architecture to improve the quality of life for citizens [18,19]. As cities evolve into more technology-driven spaces, smart city initiatives seek to enhance urban experiences by blending digital infrastructure with physical environments [20,21]. In this context, dynamic architectural façades equipped with interactive features, such as the street puppet theatre in this study, serve as an example of how smart city technologies can stimulate social engagement and improve public spaces. By utilising digital tools to facilitate real-time interactions and attract diverse audiences, these performances align with the principles of smart cities, where urban design, technology, and human interaction intersect to create liveable and sociable urban areas. This study explores how such innovative interventions on building façades can contribute to the broader goals of smart city development, particularly in enhancing social sustainability in public urban spaces.

This study contributes to smart city development and the creation of sociable urban areas in several novel ways. By situating street performances on the façades of commercial buildings, this research transforms these typically functional spaces into multifunctional public spaces, challenging traditional uses of urban architecture. In addition, this study reimagines façades as active, dynamic elements within the urban landscape, capable of fostering social engagement and redefining the role of commercial buildings in the city. Moreover, this research demonstrates how technology can be integrated into urban façades to enhance public engagement, aligning with broader smart city initiatives and offering new possibilities for the design of interactive public spaces.

In this study, the authors hypothesised that the implementation of musical theatre performances on the façades of commercial buildings could significantly ameliorate and enrich the sociability of detached urban spaces by compensating for their segregated spatial configurations, thereby accommodating a wide variety of social activities. In the subsequent sections, a review of the related existing literature is presented. Following this, the detailed methods employed in this study are described. This manuscript will then present a summary of the findings. Finally, it will conclude with discussions, remarks, and recommendations for policy and planning implementation.

2. Literature Review

2.1. Street Performances and Their Role in Fostering Social Gatherings

The previous literature indicates that street performers remarkably influence urban life, both through their positive social contributions and the regulatory challenges they face. For instance, Simpson [22] argued that street performers significantly impact the everyday life of cities by creating moments of sociality and conviviality through their interventions. However, their presence is often contentious and can lead to increased regulation and control. Bennett and Rogers [23] found that street musicians are increasingly becoming a significant and integral part of the contemporary urban soundscape, shaped by the diversification of street music and the adoption of new performance technologies. Their study revealed that modern street musicians are no longer just romanticised folk figures but are actively utilising digital music tools to create different forms of presence in urban environments. This transformation has made street music an essential aspect of urban life, reflecting the central role of technology in contemporary street music performance.

The presence of street performers at key urban nodes further reinforces their role in fostering social interactions in busy public spaces. According to Song et al. [24], street performers, along with other freelancers, gather at key traffic nodes such as metro station exits and bus stops, where they become part of the bustling environment as people return from work and engage in evening activities. Their presence contributes to the social fabric of these spaces by attracting and entertaining passers-by, which, in turn, encourages social interactions among residents. This activity enhances the convivial atmosphere of the area, making these public spaces more lively and engaging, particularly during the evening hours when the density of people is high.

The dynamic and active conservation of street art contributes to the vitality of urban areas, where performers and visual artists together create immersive public experiences. Nomeikaite [25] suggested that the conservation of street artworks should be understood as an active, dynamic process rather than a passive one. This process involves the interplay of various actors, including humans, social media, and the artworks themselves, all contributing to the 'heritagisation' of street art. Researchers have argued that the presence of itinerant artists, including portrait designers and musicians, plays a crucial role in attracting audiences to specific urban areas. Their presence stimulates sensory experiences—both visual and auditory—which draw people into these spaces, making them more lively and engaging. This attraction helps to create a dynamic atmosphere that encourages more people to visit and interact in these areas and contributes to the overall vitality of urban spaces [26].

Music performances, in particular, have a direct influence on emotional and social experiences, making them powerful tools for enhancing community interaction in both ordinary and extraordinary contexts. Kaklauskas et al. [27] verified that music performances influence the emotions and social interactions of people in urban settings. They suggested that planners can make informed decisions about how to design or manage spaces to encourage social interactions and enhance the overall urban experience, potentially including optimising spaces for music performances. Antchak et al. [28] clarified that balcony performances played a significant role in fostering community resilience and cohesion during the lockdown. These performances, which included music, singing, and other forms of expression, helped residents cope with the isolation and uncertainty brought about by the pandemic. They provided a platform for emotional connection, shared experiences, and collective expression, transforming feelings of fear and loneliness into hope and solidarity.

In addition, street music also plays a key role in shaping the character of public spaces, though its social impact can vary depending on the nature of the performances. Lin et al. [29] identified that street music performances increasingly affect how public spaces are used and managed. They enhance the atmospheric qualities of these spaces, making them more vibrant and animated. They also contribute to the overall atmosphere of the city, reflecting and reinforcing the identity of the city and creating a lively urban environment. Stevens et al. [30] declared that musician performances had a variable impact

on social gatherings, with some activations successfully encouraging engagement and social interaction, while others faced challenges in attracting participants. This study highlights the importance of integrating music with other interactive elements to maximise the city's potential as a space for public play and community connection. In summary, the literature highlights the significant role of street performances in enriching urban social life, demonstrating how these activities contribute to vibrant and engaging public spaces.

The reviewed literature collectively highlights that street performances play a crucial role in enhancing social interactions and fostering vibrant urban environments. These performances not only create lively and engaging public spaces but also adapt to evolving technologies and changing urban dynamics. By drawing people together through sensory experiences like music and visual art, street performances contribute to the social fabric of cities, promoting community cohesion and emotional connection. The reviewed literature underscores the importance of these activities in shaping the atmosphere and identity of urban spaces while also acknowledging the challenges and opportunities they present for urban planners. Collectively, these strands illustrate the multi-faceted role of street performances in shaping urban environments, both as dynamic cultural practices and as tools for enhancing social interaction and urban vitality.

2.2. Building Façades and Their Role on Social Activities

Recent studies have extensively explored the influence of building façades on the establishment of social activities. Research conducted by Urbanowicz and Nyka [31] revealed that media and interactive façades have significant potential to support public participation and generate social encounters in urban spaces. These façades may involve people as co-creators of art installations, both in person and remotely, affecting the perception and identity of urban areas. In their study, Hassan et al. [32] investigated the design of ground-floor façades and the patterns of activity on Cairo's pavements by behavioural mapping observations. Their findings indicated that specific features of ground-floor façades significantly impact on the duration of time pedestrians spend on sidewalks. Elsadek et al. [33] examined the benefits of green façades in promoting stress recovery and well-being in high-density cities. Their findings indicate that green façades have a more positive impact on human physiological and psychological relaxation compared to typical building walls.

Mao et al. [34] studied how the façades of heritage buildings in small public spaces impact on human activities. They discovered that the characteristics of historical buildings façades had a noticeable influence on human behaviour, with architectural style and decoration receiving significant attention. Hollander and Anderson [35] analysed how the quality of urban façades affects people's emotional experiences. They found that high-quality façades evoke more positive sensations compared to low-quality façades. In their study, Yuan and Chen [36] identified factors that have an influence on street vitality in high-density residential areas. These characteristics include the density of entrances and exits, the proportion of walkable areas, and the concentration of retail and service facilities. According to Wiethoff et al. [37], the integration of next-generation technologies into the façades might influence the way people interact with and perceive public spaces. The integration of digital media and technological interfaces into building façades has the potential to shape social dynamics.

Another research work explored how digital and physical elements of urban media installations can merge to create enjoyable and socially engaging environments, particularly through the lens of play in smart city settings. The study reveals that different design paradigms influence the nature of playful engagements and social interactions at both micro and macro scales, including spatial and social configurations [38]. Silvennoinen et al. [39] used a virtual reality experiment to examine the effects of walkability on liveliness, high-quality façades, and low buildings, finding that improved façade quality positively correlates with walking activity. In their study, Balasubramanian et al. [40] examined how the aesthetic attributes impact activity patterns and user behaviour in commercial street landscapes. They found that environmental diversity and perceived pleasantness, which

encompass factors such as façades, colours, aspect ratios, maintenance, and vegetation, are strongly associated with walking preferences. A further study provided evidence that urban landscapes and façades significantly impact the establishment of social activities [41]. According to their research, the presence of double-skin façades significantly increases social and behavioural activities compared to single-skin façades. Furthermore, the behaviours observed in front of double-skin façades tend to be more social in nature and are performed by choice rather than necessity. In summary, the literature reveals that building façades play a critical role in shaping social activities by influencing public engagement and interactions, demonstrating their potential to enhance urban vibrancy and community cohesion through both aesthetic and technological innovations.

2.3. Interaction of Street Performances and Urban Façades

While the effects of both building façades and street performances on social activities have been explored independently, there is a notable gap in the literature regarding their intersection—particularly how performances integrated into the façades of buildings can influence social dynamics. This study aims to fill this gap by examining the unique case of street puppet theatre shows performed on the façade of a commercial building. By combining the physical structure of the façade with the dynamic and interactive nature of the performance, this research explores how such an integration can enhance the sociability of urban spaces, particularly in smart city contexts, where the use of technology plays a pivotal role. In summary, this review of the recent literature highlights the significant impact of both attractive façades and street performances on urban social interactions. However, there is still a lack of studies investigating the impact of street puppet theatre shows on social gatherings, particularly those performed on building façades. This gap emphasises the novelty and uniqueness of the current study.

3. Materials and Methods

The research method employed in this study adopts an integrated approach, including both quantitative and qualitative components. Methodologically, this research utilised a combination of simulation studies, namely space syntax analysis, and empirical studies, specifically observation analysis. In the first stage of analysis, the urban morphology of the central part of Madrid was assessed through space syntax analysis to discern the sociability potentials of urban spatial configuration. By performing such analysis using the UCL Depthmap 10 software program, it was feasible to identify the most integrated and segregated parts of the district based on their spatial configuration. This provided fruitful insights into the position and location of the case study, helping us understand some of its crucial attributes, including integration, segregation, and its connection to the main social hubs of the city centre.

During the subsequent phase of this study, detailed empirical observations were conducted to assess the impact of street puppet theatre shows on the façades of the studied commercial buildings, focusing on their influence on social gatherings and their ability to attract people to urban spaces. For this purpose, nuanced observations of static snapshots coupled with behavioural coding using video recordings were conducted according to the research objectives. Static snapshot observations refer to a single observation or data collection that captures behavioural patterns at a specific moment in time. This method involves observing a situation, phenomenon, or behaviour at a particular moment without intervening or influencing it.

Although static snapshot observations provide valuable insights into a particular moment, they may not fully reflect the whole range of variability or dynamics present in the phenomenon over time. Thus, complementary qualitative data collection through behavioural coding was added to enrich the data. Behavioural coding involves analysing video recordings to identify and categorise specific behaviours. By developing a coding scheme to track behaviours such as social interactions, demographic data, and emotional expressions, it is possible to gather valuable insights that static snapshots alone cannot

provide. This allows the observation of people's behaviour across time and in relation to each other.

3.1. Data Collection

The data collection period coincided with a street puppet theatre show held during the Christmas and New Year's celebrations in 2024. Accordingly, data collection took place over four nights during the holiday season in 2024, namely from 9:00 p.m. to 9:15 p.m. The data collection procedure involved both quantitative and qualitative methods. In the quantitative stage, the number of attendees within the venue was initially counted, with distinct categorisation for demographic data, including gender and age groups, during each performance. In the subsequent qualitative stage, various types of behaviours and activities observed during the show, such as standing, sitting, walking, dancing, interacting, and drinking, were considered. These were categorised into a set of behavioural coding systems to understand the most prevalent behaviours during the show. A summary of the research design and its associated flow is depicted in Figure 1.

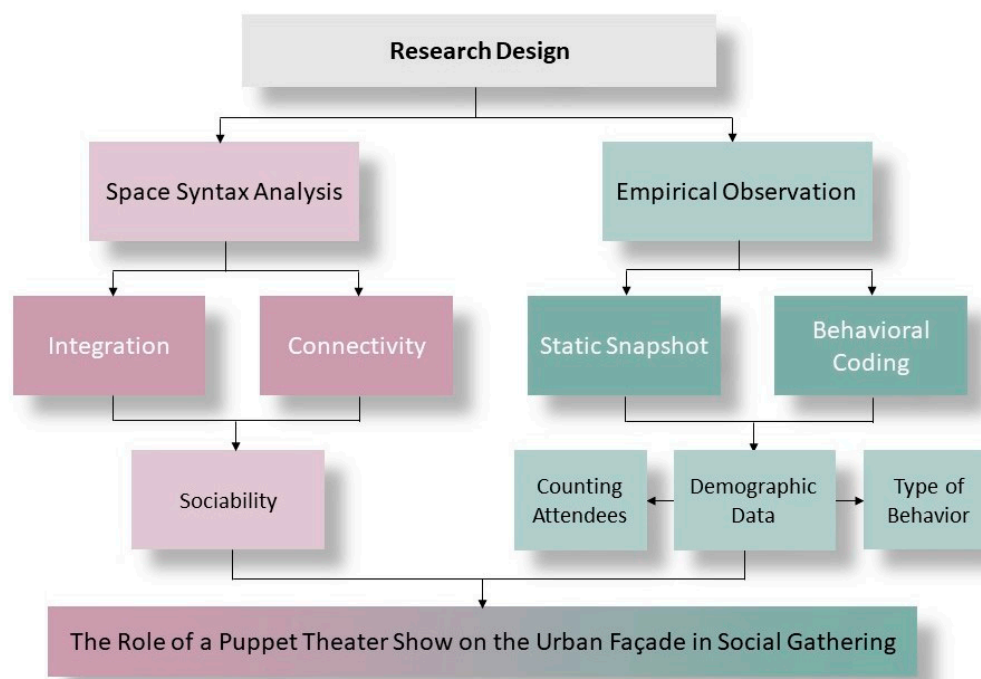


Figure 1. Research design flowchart employed in this study.

To quantify the impact of the musical show on social gatherings, detailed behavioural data were collected through video recordings and subsequent analysis. The recordings allowed for an in-depth examination of attendees' interactions and behaviours beyond mere attendance counts. This involved tracking and coding specific activities such as dancing, socialising, and various forms of engagement during the performance. By categorising these behaviours and integrating them with demographic data, the analysis aimed to capture the extent to which the show influenced social dynamics and fostered community interaction. This comprehensive approach enabled a robust assessment of how the performance affected social behaviours and interactions among different demographic groups, providing valuable insights into the show's effectiveness as a social catalyst. This dual approach allowed for a nuanced assessment of how the musical puppet show on the façade of commercial buildings stimulated social interactions and enhanced community engagement during the performances.

3.2. Location of the Case Study

The case study examines the northwest façade of the El Corte Inglés building, which is located in the central part of Madrid, close to one of the city's main squares, Sol Plaza (Figure 2). Known officially as Puerta del Sol, this square is one of Madrid's most renowned and central locations. It is a lively and bustling area, often regarded as the heart of Madrid, celebrated for its historical and cultural significance. Puerta del Sol's history stretches back to the 15th century when it served as one of the gates in the city wall surrounding Madrid. Over the years, it has transformed into a vibrant square, hosting numerous significant events. Today, Puerta del Sol is filled with shops, cafés, and restaurants, making it a popular meeting spot for both locals and tourists. It is a key starting point for exploring Madrid and is well-connected by multiple metro lines and bus routes. The square captures the essence of the city, acting as a place where people gather to celebrate, protest, and experience the pulse of Madrid. Meanwhile, El Corte Inglés is one of the largest department store groups in Europe and is a quintessential part of Spain's retail landscape, known for offering a wide variety of products. As mentioned earlier, the focus of this study is on the northwest façade of the El Corte Inglés shopping centre due to its exceptional and unique puppet theatre show on its building elevation, located on Preciados Street. This show, also known as Cortylandia, is a well-known tourist attraction in the capital of Spain, drawing a considerable range of social groups in the city (Figure 3).

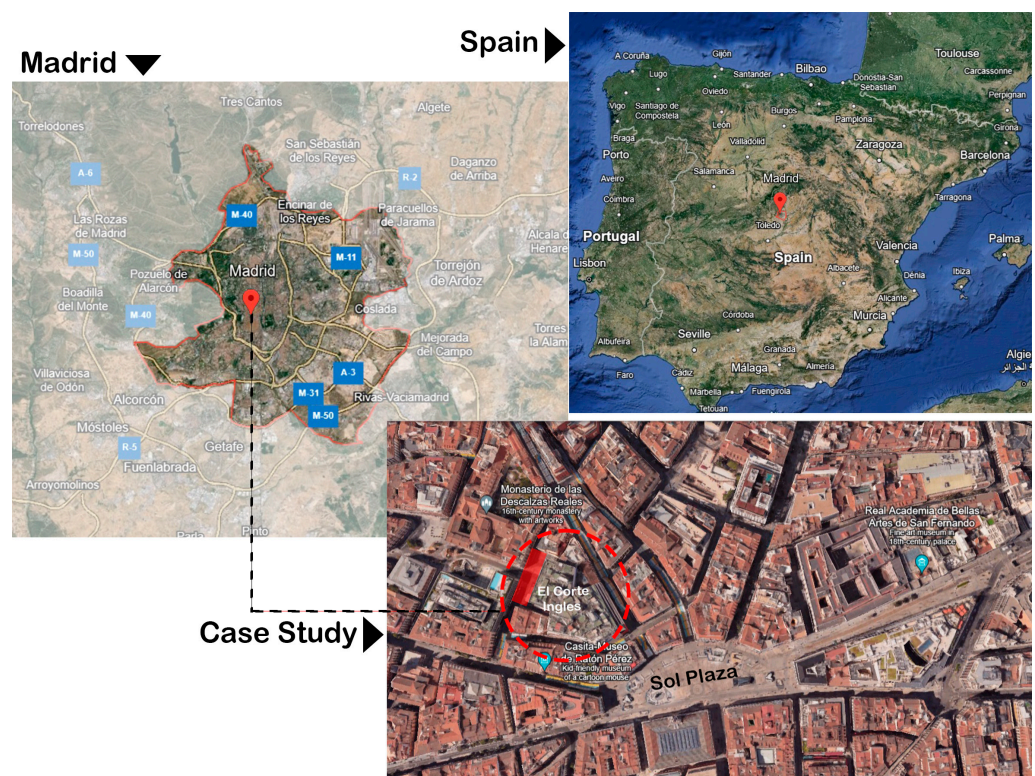


Figure 2. Sol Plaza and the position of El Corte Inglés commercial building.



Figure 3. The Façade of the street puppet theatre show at El Corte Inglés shopping centre in Madrid, Spain.

4. Results

4.1. Simulation Analysis of Urban Morphology Using Space Syntax

Space syntax is a graph-based theory that measures how social and behavioural patterns of people are influenced by spatial configurations [42–44]. These patterns are represented on a chromatic spectrum to show the degree of integration. Warm colours signify a high level of spatial integration, while cold colours indicate a low level of spatial integration. The analysis conducted in the city centre of Madrid indicated the centrality of Sol Plaza for the establishment of social gatherings in public urban spaces.

The results obtained from the space syntax analysis of the city centre of Madrid revealed that parallel to Sol Plaza, there is a well-known road, Alcalá Street, which possesses the highest level of integration and connection, as indicated by warm colours in the analytical graph. With a quantitative value of 4.80, Sol Plaza has the highest level of spatial integration in the entire central area of Madrid. Furthermore, with a connectivity level between 900 and 1130, this plaza and the parallel street have the best accessibility among all the spaces. In contrast, the studied area, as indicated by colder colours, with a spatial integration of 3.06 and a connectivity level between 63 and 250, demonstrates lower values compared to Sol Plaza despite its proximity (Figure 4). Based on these numerical data, it is assumed that the studied area is identified as one of the areas with least potential in terms of sociability and accessibility capacity.

In general, focusing on the studied area displays a different range of integration levels, but it has lower values (greener to blue areas) compared to the highly integrated core of the city. This suggests that while it has a moderate range of integration, it is less central than the core area. On the other hand, the connectivity graph, which shows the number of connections that each street segment has, revealed lower values of access to the study area. The graph demonstrates that the connection values of the study area are very poor due to its cooler colour. The results of the analysis indicate that although the general position of the case study is in proximity to the main social hub of the city, due to its subsidiary nature, it possesses a very poor connection to the important, socially vibrant part of the city.

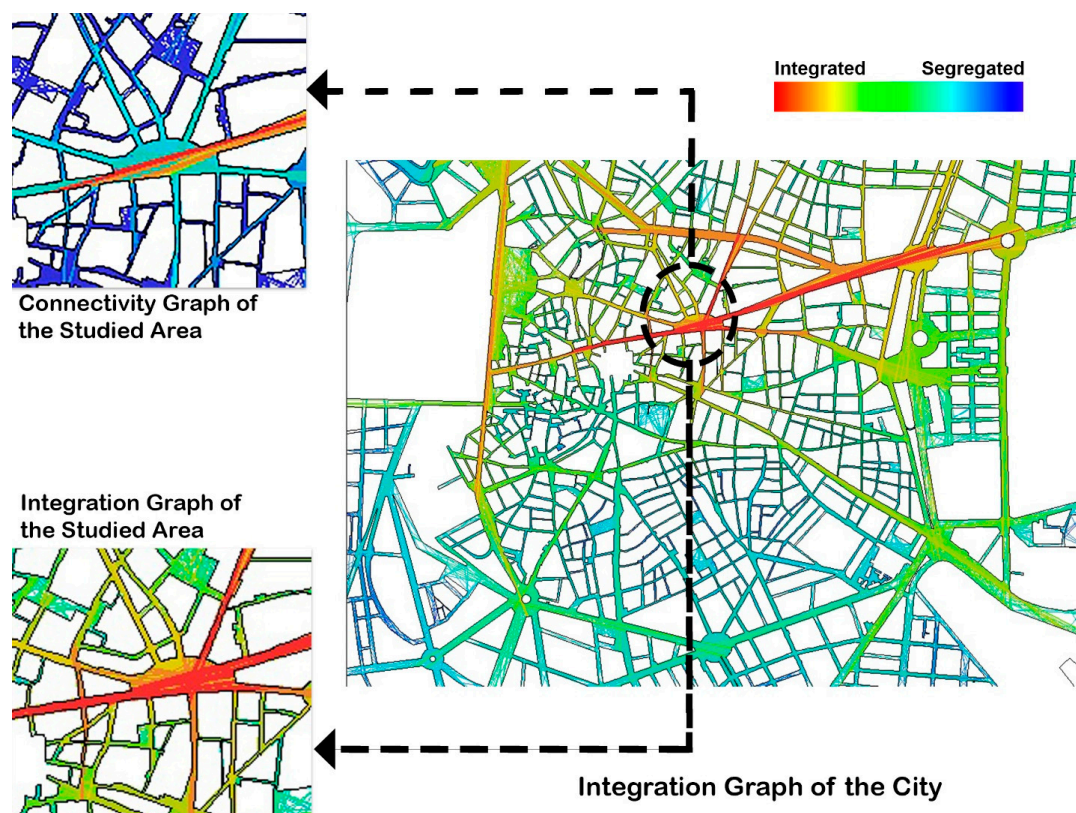


Figure 4. Analysis of axial map graph in the city centre of Madrid using integration and connectivity metrics derived from space syntax methodology.

4.2. Empirical Observations

Empirical observations involve techniques designed to analyse movement flows, social activities, and spatial usage patterns within urban areas [45]. During the first day of the street puppet show, a diverse crowd of approximately 1000 people attended the event. The audiences were predominantly male, with 590 males and 410 females. Adults made up the largest age group, numbering around 600, followed by 325 children and 75 seniors. In terms of behaviour patterns, the majority of the crowd (70%) were standing and watching the show. A minority of people (15%) participated in dancing, while others were either walking (10%) or sitting (5%). The engagement levels indicated that 70% of the attendees were solely focused on watching the performance, while 20% were both watching and singing along. Additionally, 5% were watching and drinking, while another 5% were involved in other activities.

On the second day of the street puppet show, the event attracted approximately 1150 people. The audiences had a slightly higher male attendance, with 635 males and 515 females. Adults were the predominant age group, making up about 815 of the attendees, while children accounted for 300 and seniors for 35. The behavioural patterns on this day revealed a significant increase in active participation, with 60% of the attendees dancing, 30% standing, 18% walking, and only 2% sitting. The engagement levels reflected a highly interactive crowd: 55% of the attendees were watching and singing along, 30% were only watching, 10% were watching and drinking, and 5% were engaged in other activities.

During the third day of the street puppet show, the event attracted an estimated crowd of 1030 people. The audience composition was similar to the previous days, with 600 males and 430 females. Adults were the largest age group, with about 680 attendees, followed by 280 children and 70 seniors. Behaviourally, there was a noticeable shift, with 35% of the crowd dancing, 50% standing, 10% walking, and 5% sitting. Engagement levels indicated that 60% of the attendees were watching and singing along, 30% were only watching, 2% were watching and drinking, and 8% were engaged in other activities.

On the fourth day of the street puppet show, approximately 950 people attended the event despite the adverse conditions of the rainy weather. The number of people on the fourth day was affected by the rain, although the outcome did not align with expectations. Before the show began, the number of people decreased significantly compared to the previous day. However, as soon as the show started, people gathered again, and by the end, the number of attendees was only slightly different from the previous days with no rain. The audience included 520 males and 430 females. Adults continued to be the predominant age group, with about 690 attendees, followed by 225 children and 35 seniors. Behavioural observations indicated a balanced level of activity: 40% of the attendees were dancing, 40% were standing, 20% were walking, and no one was sitting. Engagement levels showed that 50% of the attendees were watching and singing along, 40% were only watching, 5% were watching and drinking, and another 5% were engaged in other activities. A detailed analysis of the population dynamics and behaviours over a four-day period is demonstrated in the following charts (Figure 5).

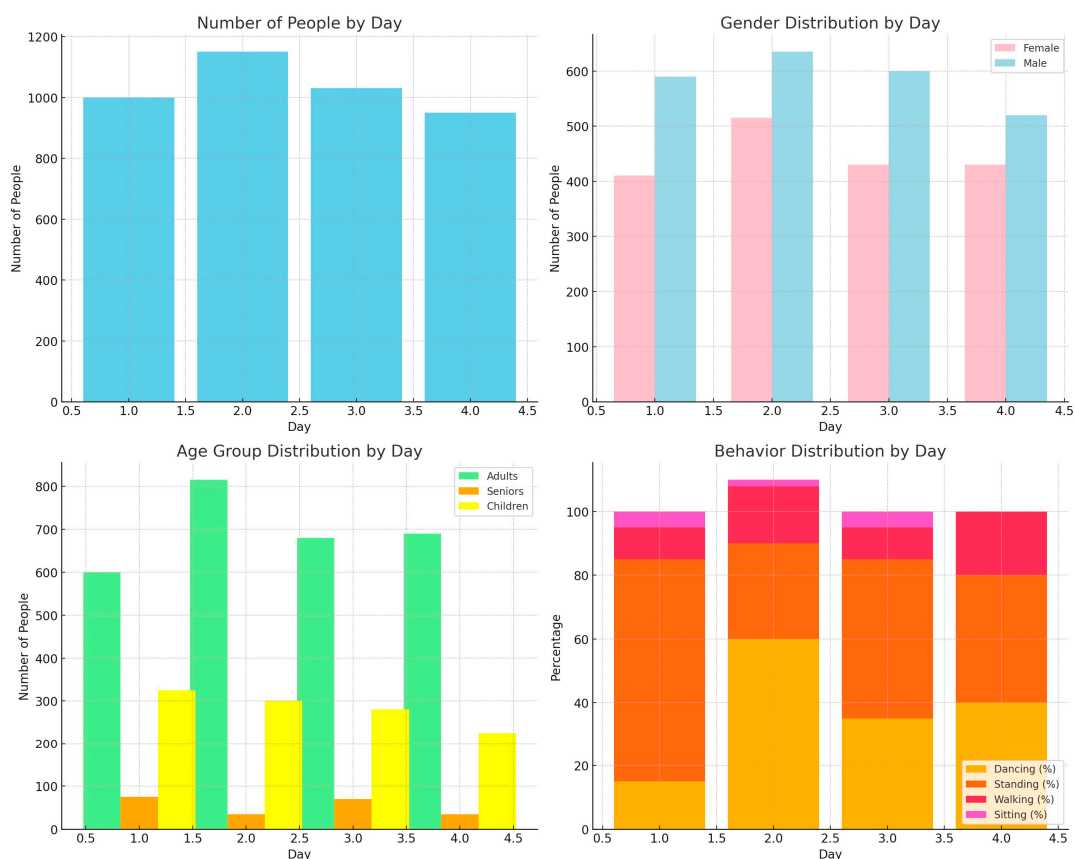


Figure 5. Demographic and behavioural data by day.

4.3. The Mechanism Linking Building Façades, Street Shows, and Social Activities

The observations over four days of performances illustrate a variety of social activities that arose in response to the puppet theatre show. Each day revealed varying degrees of participation, engagement, and movement patterns, driven by the interaction between the façade performance and the audience. The following scenarios can be explored to further understand the relationship between building façades, street shows, and social activities:

Scenario 1: Highly Interactive Spaces: On days when the performance drew larger crowds and generated more active participation (e.g., dancing, singing), the social dynamics of the space were more pronounced. This scenario highlights the potential of façade-based performances to transform static public spaces into dynamic, interactive hubs. It

demonstrates how such performances can generate a high degree of sociality in spaces that are otherwise only mildly integrated into the urban fabric.

Scenario 2: Passive Viewing and Limited Engagement: On other days, particularly when adverse weather conditions were present, the audience exhibited less physical interaction and more passive viewing behaviour. This scenario suggests that the success of façade-based performances may depend on additional factors such as environmental conditions or the type of performance. In this case, the façade's role in fostering social activity was more limited, serving primarily as a visual attraction rather than a full facilitator of social activities.

Scenario 3: Façade as a Social Equaliser: In spaces with lower connectivity or integration, such as the studied site, façade performances may act as equalisers by drawing people to otherwise less vibrant areas. This scenario can be particularly valuable in urban design, where certain areas may lack the inherent spatial qualities that foster social interaction. By introducing performances on these façades, urban planners could strategically enhance the sociability of less integrated spaces.

By examining these different scenarios, it becomes clear that the interaction between building façades, street performances, and social activities is multifaceted. While façades play a crucial role in generating visual interest, their capacity to facilitate social activities depends on additional factors such as performance type, audience engagement, and environmental conditions. Nevertheless, the results highlight the transformative potential of building façades in smart city contexts, where they can serve as platforms for both entertainment and social engagement.

The space syntax analysis revealed critical insights into the spatial configuration of Madrid's city centre and the studied area. As previously noted, the main social hub of Sol Plaza exhibited the highest integration values, indicating its importance in facilitating social gatherings. In contrast, the studied façade at El Corte Inglés showed moderate integration and poor connectivity. However, the street performances demonstrated that even in areas with lower spatial integration, urban façades can serve as mechanisms to enhance sociability by compensating for spatial limitations through targeted performances. By transforming an otherwise disconnected space into a focal point for social interaction, the façade performance demonstrated the ability of architecture to mitigate spatial segregation. This suggests a scenario where smart city planning could employ façade-based performances as interventions in less integrated urban spaces to foster social cohesion and engagement, potentially equalising the social opportunities across different urban zones.

In summary, the results of this study indicate that building façades, when used as platforms for dynamic performances, can significantly influence social activities in urban spaces. The puppet theatre performance at the façade of El Corte Inglés illustrated how even façades in less socially integrated areas could become focal points for social gatherings. By exploring the relationship between architecture, performance, and social interaction, this research provides new insights into how urban design can enhance community cohesion and create lively, interactive public spaces.

5. Discussion

This research examined the impact of a musical puppet show on the façade of commercial buildings to stimulate social gatherings in smart cities. The study specifically observed the effects of the show held at the famous shopping centre, El Corte Inglés, in Madrid, Spain, during the 2024 holiday season. The key stages and the main structure of the paper are visualised in Figure 6, which shows the logical progression of this research, from the literature review to the analysis and conclusions. The discussion section includes three main subsections: the interpretation of the obtained results and their contribution to the body of knowledge (Section 5.1), implications for policy and planning (Section 5.2), and limitations of this research as well as suggestions for future research orientation.

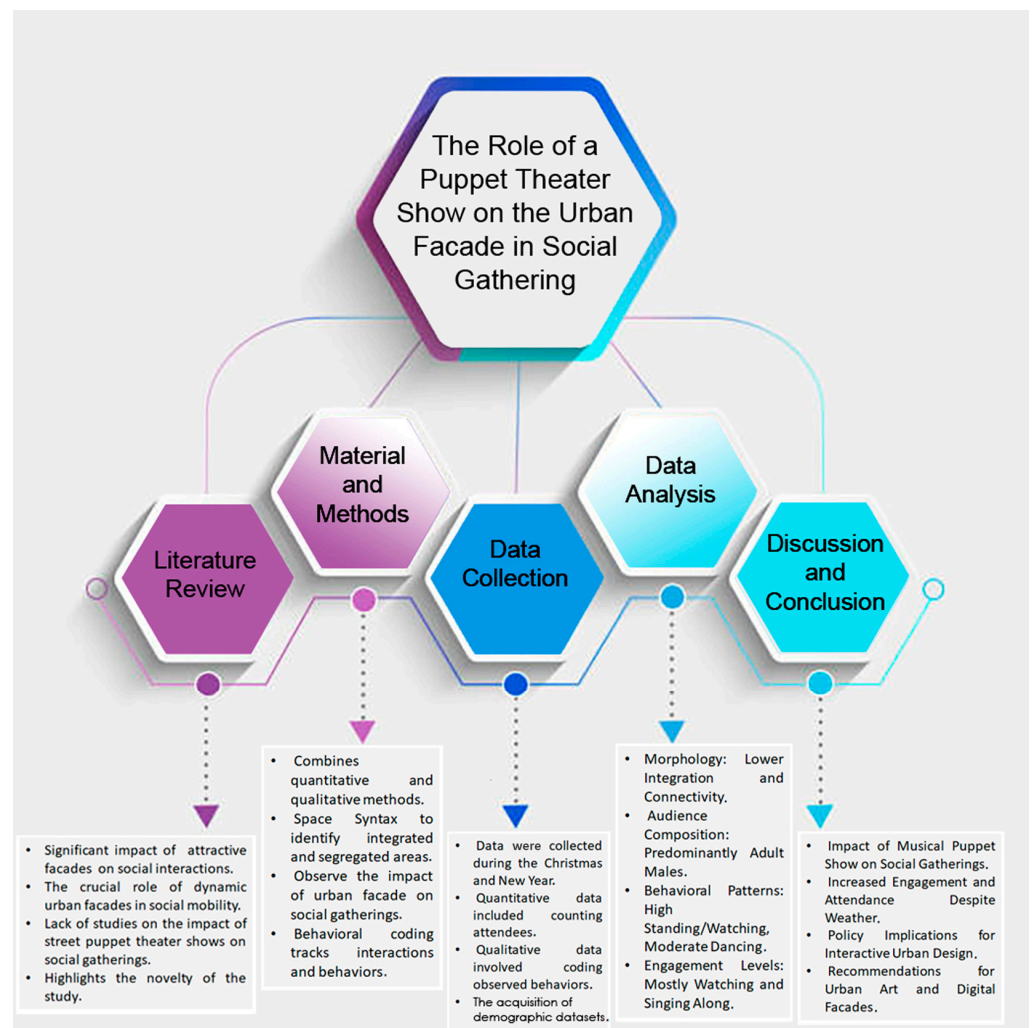


Figure 6. The key stages and the main structure of this research.

5.1. The Interpretation and Contribution of This Study

Interpreting the data obtained from empirical observations indicates that the second day had a higher turnout and a more vibrant atmosphere in contrast to the first day. The prevalence of dancing and singing suggests that the audiences were highly entertained and actively engaged in the show, creating a dynamic and engaging experience for all attendees. However, the data from the third day reveal a balanced level of attendance compared to the previous days, with slightly more active and engaged audiences. The higher percentage of dancing and singing underscores the audience's enjoyment and participation, maintaining the lively and dynamic atmosphere of the street puppet show. Unexpectedly, the rainy weather on the fourth day resulted in slightly lower attendance compared to the previous days. Nevertheless, the crowd remained active and engaged, with a significant portion of the audience participating in dancing and singing. The continued high levels of engagement indicate that the street puppet show maintained its appeal and entertainment value, even under less favourable weather conditions.

One of the interesting aspects of the show that required careful attention was the transformation of the community's behaviours in response to the mood of the displayed story. For instance, when the storyteller was describing a specific part of the story, most of the attendees followed the narrative and became deeply involved in it. However, when the show transitioned into its musical part, the majority of attendees accompanied the music, started to dance, and attempted to sing along with the crowd. Therefore, the behavioural patterns of the people in this case were strongly associated with the spatio-

temporal attributes. This fact reveals an intriguing contribution to the body of knowledge, indicating that as an urban designer, architect, or policymaker, it is possible to influence and control the behaviours of people and guide them in the most favourable way.

On the other hand, the quality of the show necessitates substantial consideration as it is closely associated with audience attraction. For example, in this show, in addition to the storyteller characterising a specific scenario, the 3D puppet characters, their movements, the quality of lighting, and many other attributes enhance the overall quality. The performers also simulate artificial snow to evoke the Christmas theme of the show. Additionally, the falling of such party snow creates a sense of a fourth dimension, making the simulation more realistic. This process has led to audiences becoming profoundly involved in the show, and as a result, it can lead to better social gatherings at such events. Moreover, considering the childish theme of the show, it was expected to attract more children. However, it was observed that most of the adults were engaged in this show. This fact contributes to the understanding that a childish theme is not necessarily only attractive to children, but it also has the capability of engaging adults and evoking their childhood memories.

The results obtained from urban morphology analysis using space syntax revealed an interesting outcome. Although the findings from a morphological analysis indicated that the studied urban façade is in the vicinity of the main plaza and social hub of the city, its subsidiary position places it in a poorly connected and integrated area. This reveals that, according to the spatial configuration and structure of the urban layout, these spaces do not have sufficient potential to absorb social groups from the community. Inherently, it does not possess the potential for social gathering and the establishment of social interactions among people. However, the results of the data collection from empirical observations substantiated that, regardless of the debilitating spatial attributes of these areas in terms of sociability, this particular and dynamic urban façade contributes to the liveliness of the area and brings life to this almost dead space. This activates the presence of people, including locals and tourists, in this area (Figure 7).



Figure 7. The role of street puppet theatre on the urban façade in social gatherings.

In fact, considering the specific land use of this building, which is commercial, this sort of façade has attracted a large community and potential customers for their products, helping them sell their goods and brands. Surprisingly, the conducted observations indicated that after the show, a considerable number of people entered the shopping centre to visit and possibly shop, demonstrating the success of this urban façade in improving the prosperity of the shopping centre (Figure 8). After removing this puppet theatre show from the façade of the building, the area has been converted to an inactive and ordinary space without life, as predicted by space syntax analysis (Figure 9).

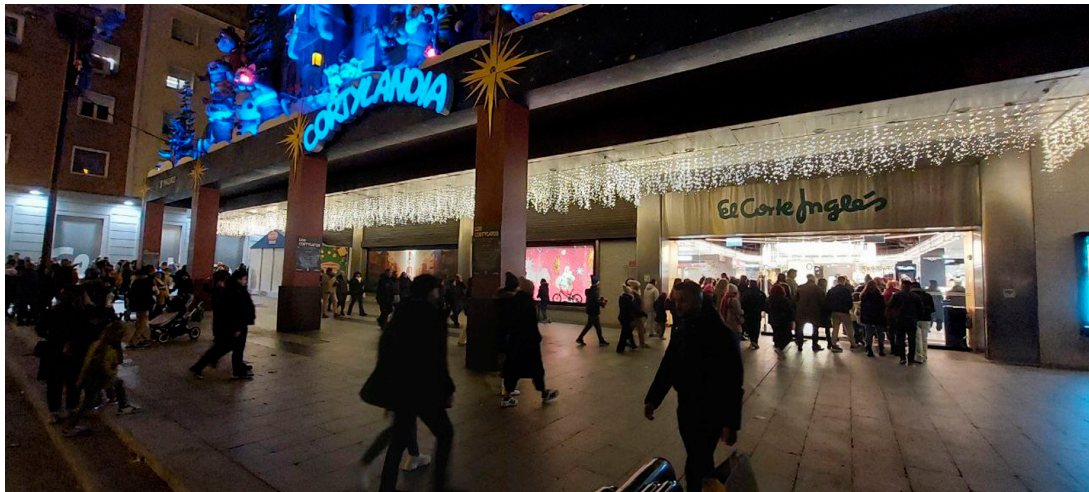


Figure 8. Audience referrals to the shopping centre after ending the show.

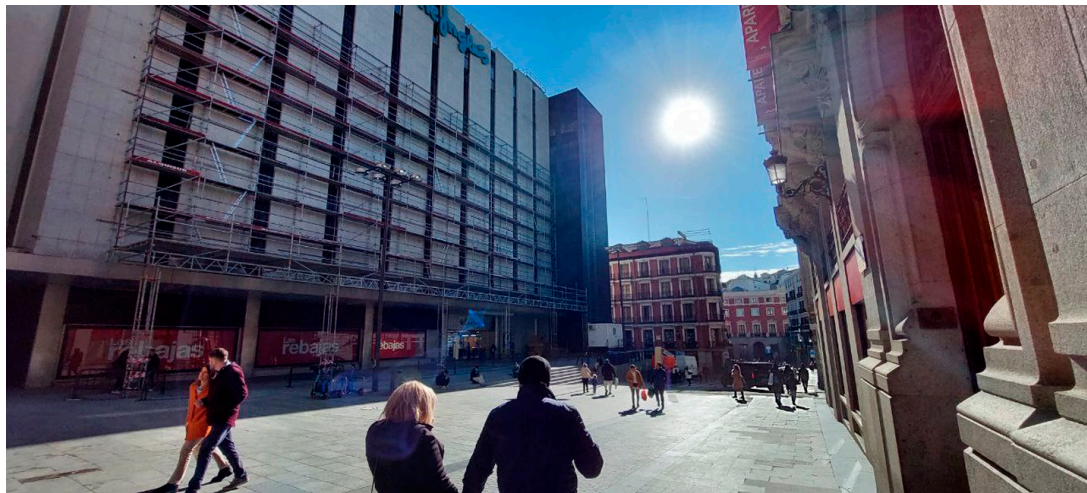


Figure 9. The transformation of a sociable area into an ordinary urban space after the removal of the show from the commercial building's façade as predicted by space syntax analysis.

To summarise, this analysis demonstrates that the street puppet show generated a highly engaging and dynamic atmosphere, with increased attendance and active participation. Despite the slightly lower attendance on the fourth day due to rainy weather, the audience remained active and enthusiastic, demonstrating the show's strong appeal and entertainment value. Overall, the data suggest that the innovative use of street puppet theatre on commercial building façades successfully stimulated social gatherings and provided an engaging experience for all attendees, even under varying weather conditions. Interestingly, the results of this research indicated that, in addition to fostering a socially sustainable urban space, this particular urban façade can also positively contribute to economic sustainability and augment the prosperity of this shopping centre. This may work much better than many advertisements that famous brands typically employ.

The findings of this study contribute to the discourse on smart city development by demonstrating how architectural interventions can enhance public space utilisation and foster social engagement. In the context of smart cities, technology-driven façades like the one used in this study represent a novel approach to creating vibrant urban environments. By combining digital media, architecture, and artistic shows, the façade in this case acts as a technological mediator that enhances social gatherings in segregated areas. This aligns with the broader smart city vision of using technology to create more liveable, interactive, and engaging urban spaces. Urban planners and policymakers can merge art, architecture,

and technology to create dynamic urban façades that foster inclusive public spaces and enhance social and economic sustainability, particularly in commercial areas.

In comparison to the findings of this study, which focuses on the impact of façade performances on social activities in a specific urban context, the literature reveals a range of insights into how street performances influence urban life. Song et al. [24] and Nomeikaite [25] emphasise that street performers enhance the social fabric of key traffic nodes and contribute to the vibrancy of urban spaces through sensory stimulation. Kaklauskas et al. [27] and Antchak et al. [28] further illustrate that musical performances can positively influence emotions and social cohesion, particularly during challenging times like the pandemic. Lin et al. [29] and Stevens et al. [30] address how street music can transform public spaces, with varying degrees of success in encouraging social interaction, thus underscoring the importance of integrating interactive elements. This study complements these findings by demonstrating that façade performances can similarly activate less integrated urban areas, offering a novel approach to enhancing social engagement and cohesion through architectural interventions.

With regard to comparing the results obtained from the current research with previously published studies in the field, it can be noted that the present study investigates the role of an intervening variable, such as weather conditions, on behavioural changes among people in urban spaces. This was previously identified as one of the existing gaps in the field of behavioural science [46,47]. While confirming the correlation between urban connectivity and mobility established in previous studies [48], this research goes beyond the existing literature by exploring how to enhance mobility and vibrancy in poorly connected urban areas. Furthermore, previous studies have substantiated the critical role of urban landmarks on social mobility patterns [9,49–51]. In addition, the visual qualities of building façades in creating attractive streetscapes [52–58], and fostering more sociable and walkable urban areas have been investigated so far [13,59–66]. Therefore, this study is unique in its focus, underscoring the novelty and originality of the work, and its contribution to the body of literature.

5.2. Implications for Policy and Planning

The current research on the impact of dynamic façades on urban social gatherings suggests several implications for policy and planning. Urban planners and policymakers should integrate interactive and digital façades into urban design guidelines to foster public engagement and enhance social interactions, transforming urban spaces into lively environments. In addition, policies should support public art installations and cultural events, promoting community engagement and enriching the socio-cultural landscape of cities. Focusing on sustainable and adaptive media architecture, planners ought to prioritise eco-friendly technologies that can adjust to evolving social needs, as these are crucial to addressing the challenges associated with smart cities.

On the other hand, ensuring suitable accessibility and inclusivity in such digital installations is crucial, as is encouraging community involvement in creating urban art projects to foster a sense of belonging, ownership, place attachment, and social equity in public urban spaces. Urban art and digital façades should be utilised in urban regeneration efforts to revitalise underused areas and stimulate economic and social activities. Clear guidelines for the safety and management of public art installations, including crowd control, safety, and maintenance, are necessary. Promoting collaboration between artists, architects, urban planners, and technology experts can create innovative urban art projects and enhance the influence of smart cities on the social well-being of users. Additionally, implementing mechanisms to evaluate and monitor their impact on security-related issues is indispensable.

Supporting pilot projects and innovative experimental installations can test new ideas and provide valuable insights for broader implementation, ultimately creating more interactive and socially engaging urban environments. In addition, considering the outcome of this research and the large number of visitors and attendees at such entertaining shows,

providing a wide variety of infrastructure, including suitable urban furniture, could facilitate the active presence of specific age groups, such as senior citizens and children, allowing them to fully benefit from the show. It should be noted that the current case study in Madrid is only used temporarily during specific events, such as Christmas celebrations. It would be much more useful if policymakers could extend such socially engaging events and hold them more regularly, such as on weekends, to maintain social vibrancy and economic prosperity more sustainably.

The implications of this study are relevant beyond the immediate vicinity of the main social hubs of cities. By employing façade-based performances as temporary interventions, urban planners can mitigate the negative effects of spatial segregation and foster social cohesion in areas that may otherwise lack vibrancy. Therefore, the study contributes to smart city development by proposing a practical approach for enhancing social interaction in various urban settings, including those distant from major social hubs. This approach aligns with the vision of creating more sociable and interactive public spaces across diverse urban environments, demonstrating the potential for such interventions to equalise social opportunities and improve community engagement citywide. To further clarify, dynamic façades encourage continuous social engagement by creating adaptable, and interactive spaces that accommodate diverse social activities. The ongoing functionality of such façades can foster long-term community cohesion and inclusivity by promoting regular social interaction, contributing to social sustainability on a broader urban scale.

5.3. Limitations and Future Research Orientation

While this research provides valuable insights, there are some limitations and constraints that might slightly affect the study. The limited period of the performance (four nights) is the most notable limitation. The study includes some quantitative analysis, such as counting attendees and categorising demographic data, which is quite difficult to measure during this limited period and might come with some constraints. Another limitation was the short duration of the performance—only 15 min—which may not be sufficient to capture and observe the full range of potential behaviours and interactions.

It should be noted that this case study operates as an experimental stimulus in a temporary context. The observed limitations, such as the restricted study period during a festival and the brief time frame for the performances, were largely due to the specific governance policies regulating the event. In addition, the study provides demographic data on gender and age groups but does not delve into other potentially relevant demographic factors such as socioeconomic status, cultural background, and tourists versus locals, which were not applicable during the performance. These factors could influence engagement and attendance, thus affecting the outcomes.

Future studies can compare the impact of puppet theatre performances with other forms of urban art and public entertainment (e.g., street musicians, murals, interactive installations) to identify the most effective methods for enhancing social interactions in public urban spaces. Additionally, research should be expanded to investigate the safety aspects of such performances, including crowd management and the inclusivity of events for people with disabilities or other special needs. Furthermore, collecting a wider variety of demographic data, as well as the personal opinions of attendees through interviews or questionnaires, can enrich the outcomes for future research. Finally, exploring how these findings can be integrated into urban planning and policymaking can provide guidelines for urban planners and policymakers on using art and technology to enhance public spaces and community engagement in smart cities.

6. Conclusions

This research explored the impact of a musical puppet show performed on the façade of El Corte Inglés, a renowned shopping centre in Madrid, on urban social gatherings. The innovative use of dynamic urban façades demonstrated significant potential to transform otherwise segregated and underutilised urban spaces into vibrant social hubs. The

study highlights the ability of dynamic urban façades to manipulate and enhance social behaviours, guiding people towards more favourable interactions, despite their lower morphological attribute values in absorbing social communities. This research demonstrated that dynamic façades not only foster social sustainability by creating lively urban spaces but also contribute to economic sustainability by attracting potential customers to commercial centres.

The uniqueness and originality of this study lie in the introduction of a novel intervening variable—urban architecture—that can stimulate social gatherings in urban spaces. This case study is distinctive in combining technological advancements with artistic performances within the context of smart cities, offering valuable insights into creating more sociable and liveable urban areas. This case study can serve as a model for developing similar concepts in other urban areas that lack community spirit and social cohesion and can be considered a cornerstone for advancing the integration of architecture, performance, and social interaction within the context of smart cities.

In conclusion, this study underscores the transformative potential of dynamic urban façades in revitalising underused urban spaces and fostering social interactions. By merging art, architecture, and technology, urban planners and policymakers can create engaging and inclusive public spaces that contribute to both social and economic sustainability. Beyond the superficial findings of the research, this study suggests that it is possible to influence and direct people's social behaviours in the most beneficial way. The success of the puppet show at El Corte Inglés exemplifies how creative interventions can breathe life into ordinary spaces, making them extraordinary and vibrant social hubs. Future research should continue to explore the interplay between urban design, technology, and social behaviour to further enhance the liveability and vibrancy of urban environments.

Author Contributions: This paper is the result of collaborative efforts from all authors. In particular, 'Section 4' (with its sub-sections) and 'Section 5' were written jointly by the authors. R.A. wrote 'Section 1', 'Section 3.1' and 'Section 5.1'. M.D. wrote 'Section 2', 'Section 3' and 'Section 3.2'. C.G. wrote 'Section 5.2', 'Section 5.3' and 'Section 6'. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Data Availability Statement: The data that support the findings of this study are available upon reasonable request from the corresponding author. Restrictions may apply to the availability of data due to privacy or ethical considerations.

Acknowledgments: This study was supported by the MUR through two projects: (1) SMART3R-FLITS: SMART Transport for Travellers and Freight Logistics Integration Towards Sustainability (Project protocol: 2022J38SR9; CUP Code: F53D23005630006) and (2) MOVING StEPS: MOVING from Street Experiments to adaptive Planned Solutions (Project protocol: 2022BLK9TS; CUP Code: F53D23005550006), both financed with the PRIN 2022 (Research Projects of National Relevance) programme, funded by the European Union—NextGenerationEU. This study reflects only the authors' views and opinions, neither the European Union nor the European Commission can be considered responsible for them.



For the purpose of ensuring linguistic correctness, the authors used OpenAI services to verify the appropriateness of the linguistic structure and readability. After using this tool, the authors thoroughly reviewed and edited the content as needed, taking full responsibility for the publication's content.

Conflicts of Interest: The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

1. Bibri, S.E.; Krogstie, J. On the Social Shaping Dimensions of Smart Sustainable Cities: A Study in Science, Technology, and Society. *Sustain. Cities Soc.* **2017**, *29*, 219–246. [\[CrossRef\]](#)
2. Annunziata, A.; Garau, C. Understanding Kid-Friendly Urban Space for a More Inclusive Smart City: The Case Study of Cagliari (Italy). In Proceedings of the Computational Science and Its Applications—ICCSA 2018: 18th International Conference, Melbourne, Australia, 2–5 July 2018; Proceedings, Part III; Springer International Publishing: Berlin/Heidelberg, Germany, 2018; pp. 589–605. [\[CrossRef\]](#)
3. De Falco, S.; Angelidou, M.; Addie, J.-P.D. From the “Smart City” to the “Smart Metropolis”? Building Resilience in the Urban Periphery. *Eur. Urban Reg. Stud.* **2019**, *26*, 205–223. [\[CrossRef\]](#)
4. Garau, C.; Annunziata, A. Public Open Spaces: Connecting People, Squares and Streets by Measuring the Usability through the Villanova District in Cagliari, Italy. *Transp. Res. Procedia* **2022**, *60*, 314–321. [\[CrossRef\]](#)
5. Nasar, J. *Environmental Aesthetics: Theory, Research, and Applications*; Cambridge University: Cambridge, UK, 1988.
6. Kordi, A.O.; Galal Ahmed, K. Towards a Socially Vibrant City: Exploring Urban Typologies and Morphologies of the Emerging “CityWalks” in Dubai. *City Territ. Archit.* **2023**, *10*, 34. [\[CrossRef\]](#)
7. Carmona, M. *Public Places Urban Spaces: The Dimensions of Urban Design*; Routledge: New York, NY, USA, 2021. [\[CrossRef\]](#)
8. Biddau, G.M.; Marotta, A.; Sanna, G. Abandoned Landscape Project Design. *City Territ. Archit.* **2020**, *7*, 10. [\[CrossRef\]](#)
9. Kesici, N.; Erkan, N.Ç. The Effect of Public Facade Characteristics on Changing Pedestrian Behaviors. *J. Archit. Urban.* **2023**, *47*, 68–76. [\[CrossRef\]](#)
10. Askarizad, R.; Jafari, B. The Influence of Neo-Classical Facades on Urban Textures of Iran. *J. Hist. Cult. Art Res.* **2019**, *8*, 188–200. [\[CrossRef\]](#)
11. Salingaros, N.A. Urban Space and Its Information Field. *J. Urban Des.* **1999**, *4*, 29–49. [\[CrossRef\]](#)
12. Nasar, J.L. Urban Design Aesthetics: The Evaluative Qualities of Building Exteriors. *Environ. Behav.* **1994**, *26*, 377–401. [\[CrossRef\]](#)
13. Gehl, J.; Kaefer, L.J.; Reigstad, S. Close Encounters with Buildings. *Urban Des. Int.* **2006**, *11*, 29–47. [\[CrossRef\]](#)
14. Serra, J.; Iñarra, S.; Torres, A.; Llopis, J. Analysis of Facade Solutions as an Alternative to Demolition for Architectures with Visual Impact in Historical Urban Scenes. *J. Cult. Herit.* **2021**, *52*, 84–92. [\[CrossRef\]](#)
15. Tomitsch, M.; McArthur, I.; Haeusler, M.H.; Foth, M. The Role of Digital Screens in Urban Life: New Opportunities for Placemaking. In *Citizen's Right to the Digital City*; Foth, M., Brynskov, M., Ojala, T., Eds.; Springer: Singapore, 2015; pp. 37–54. [\[CrossRef\]](#)
16. Matin, N.H.; Eydgahi, A. Technologies Used in Responsive Facade Systems: A Comparative Study. *Intell. Build. Int.* **2019**, *14*, 54–73. [\[CrossRef\]](#)
17. Bianchi, S.; Andriotis, C.; Klein, T.; Overend, M. Multi-Criteria Design Methods in Façade Engineering: State-of-the-Art and Future Trends. *Build. Environ.* **2024**, *250*, 111184. [\[CrossRef\]](#)
18. Silva, B.N.; Khan, M.; Han, K. Towards Sustainable Smart Cities: A Review of Trends, Architectures, Components, and Open Challenges in Smart Cities. *Sustain. Cities Soc.* **2018**, *38*, 697–713. [\[CrossRef\]](#)
19. Kadaei, S.; Nezam, Z.; González-Lezcano, R.A. A New Approach to Determine the Reverse Logistics-Related Issues of Smart Buildings Focusing on Sustainable Architecture. *Front. Environ. Sci.* **2022**, *10*, 1079522. [\[CrossRef\]](#)
20. Hui, C.X.; Dan, G.; Alamri, S.; Toghraie, D. Greening smart cities: An investigation of the integration of urban natural resources and smart city technologies for promoting environmental sustainability. *Sustain. Cities Soc.* **2023**, *99*, 104985. [\[CrossRef\]](#)
21. Li, H.; Liu, Y.; Qin, Z.; Rong, H.; Liu, Q. A Large-Scale Urban Vehicular Network Framework for IoT in Smart Cities. *IEEE Access* **2019**, *7*, 74437–74449. [\[CrossRef\]](#)
22. Simpson, P. Street Performance and the City: Public Space, Sociality, and Intervening in the Everyday. *Space Cult.* **2011**, *14*, 415–430. [\[CrossRef\]](#)
23. Bennett, A.; Rogers, I. Street Music, Technology and the Urban Soundscape. *Continuum* **2014**, *28*, 454–464. [\[CrossRef\]](#)
24. Song, H.; Pan, M.; Chen, Y. Nightlife and Public Spaces in Urban Villages: A Case Study of the Pearl River Delta in China. *Habitat Int.* **2016**, *57*, 187–204. [\[CrossRef\]](#)
25. Nomeikaite, L. Heritagization of Street Art as a Theatrical Performance: The Case Study of Dolk’s Artworks Conservation in Bergen, Norway. *J. Urban Cult. Stud.* **2020**, *7*, 133–155. [\[CrossRef\]](#)
26. Askarizad, R.; Safari, H. The Influence of Social Interactions on the Behavioral Patterns of the People in Urban Spaces (Case Study: The Pedestrian Zone of Rasht Municipality Square, Iran). *Cities* **2020**, *101*, 102687. [\[CrossRef\]](#)
27. Kaklauskas, A.; Bardauskiene, D.; Cerkauskienė, R.; Ubarte, I.; Raslanas, S.; Radvilė, E.; Kaklauskaitė, U.; Kaklauskienė, L. Emotions Analysis in Public Spaces for Urban Planning. *Land Use Policy* **2021**, *107*, 105458. [\[CrossRef\]](#)
28. Antchak, V.; Gorchakova, V.; Rossetti, G. The Value of Events in Times of Uncertainty: Insights from Balcony Performances in Italy during the COVID-19 Lockdown. *Ann. Leis. Res.* **2024**, *27*, 87–104. [\[CrossRef\]](#)
29. Lin, J.; Wang, X.; Lin, G. Performance and Atmosphere in Urban Public Spaces: Street Music in Guangzhou, China. *Geogr. Res.* **2024**, *62*, 279–292. [\[CrossRef\]](#)
30. Stevens, Q.; Leorke, D.; Thai, H.M.H.; Innocent, T.; Tolentino, C. Playful, Portable, Pliable Interventions into Street Spaces: Deploying a ‘Playful Parklet’ across Melbourne’s Suburbs. *J. Urban Des.* **2024**, *29*, 231–251. [\[CrossRef\]](#)
31. Urbanowicz, K.; Nyka, L. Interactive and Media Architecture—From Social Encounters to City Planning Strategies. *Procedia Eng.* **2016**, *161*, 1330–1337. [\[CrossRef\]](#)

32. Hassan, D.M.; Moustafa, Y.M.; El-Fiki, S.M. Ground-Floor Façade Design and Staying Activity Patterns on the Sidewalk: A Case Study in the Korba Area of Heliopolis, Cairo, Egypt. *Ain Shams Eng. J.* **2019**, *10*, 453–461. [[CrossRef](#)]
33. Elsadek, M.; Liu, B.; Lian, Z. Green Façades: Their Contribution to Stress Recovery and Well-Being in High-Density Cities. *Urban For. Urban Green.* **2019**, *46*, 126446. [[CrossRef](#)]
34. Mao, Y.; Qi, J.; He, B.-J. Impact of the Heritage Building Façade in Small-Scale Public Spaces on Human Activity: Based on Spatial Analysis. *Environ. Impact Assess. Rev.* **2020**, *85*, 106457. [[CrossRef](#)]
35. Hollander, J.B.; Anderson, E.C. The Impact of Urban Façade Quality on Affective Feelings. *Archnet-IJAR* **2020**, *14*, 219–232. [[CrossRef](#)]
36. Yuan, M.; Chen, Y. Analysis of Factors Influencing Street Vitality in High-Density Residential Areas Based on Multi-Source Data: A Case Study of Shanghai. *Int. J. High-Rise Build.* **2021**, *10*, 1–8. [[CrossRef](#)]
37. Wiethoff, A.; Hoggenmueller, M.; Rossmly, B.; Hirsch, L.; Hespanhol, L.; Tomitsch, M. A Media Architecture Approach for Designing the Next Generation of Urban Interfaces. *Interact. Des. Archit.* **2021**, *48*, 9–32. [[CrossRef](#)]
38. Afonso, A.G.; Schieck, A. Play in the Smart City Context: Exploring Interactional, Bodily, Social and Spatial Aspects of Situated Media Interfaces. *Behav. Inform. Technol.* **2019**, *39*, 656–680. [[CrossRef](#)]
39. Silvennoinen, H.; Kuliga, S.; Herthogs, P.; Recchia, D.R.; Tunger, B. Effects of Gehl’s Urban Design Guidelines on Walkability: A Virtual Reality Experiment in Singaporean Public Housing Estates. *Environ. Plan. B Urban Anal. City Sci.* **2022**, *49*, 2409–2428. [[CrossRef](#)]
40. Balasubramanian, S.; Irulappan, C.; Kitchley, J.L. Aesthetics of Urban Commercial Streets from the Perspective of Cognitive Memory and User Behavior in Urban Environments. *Front. Archit. Res.* **2022**, *11*, 949–962. [[CrossRef](#)]
41. Yazdi, S.; Alier Forment, M.; Sanchez Riera, A.; Askarizad, R. Assessing the Impact of Double-Skin Façades on Social Activities of People in Urban Spaces Using Empirical and Syntactical Analysis. *J. Asian Archit. Build. Eng.* **2024**, *23*, 813–828. [[CrossRef](#)]
42. Hillier, B.; Hanson, J. *The Social Logic of Space*; Cambridge University Press: Cambridge, MA, USA, 1984.
43. Penn, A. Space Syntax and Spatial Cognition: Or Why the Axial Line? *Environ. Behav.* **2003**, *35*, 30–65. [[CrossRef](#)]
44. Karimi, K. The Configurational Structures of Social Spaces: Space Syntax and Urban Morphology in the Context of Analytical, Evidence-Based Design. *Land* **2023**, *12*, 2084. [[CrossRef](#)]
45. Al Sayed, K.; Turner, A.; Hillier, B.; Lida, S.; Penn, A. *Space Syntax Methodology*, 4th ed.; Bartlett School of Architecture, UCL: London, UK, 2014.
46. Askarizad, R.; Lamíquiz Daudén, P.J.; Garau, C. The Application of Space Syntax to Enhance Sociability in Public Urban Spaces: A Systematic Review. *ISPRS Int. J. Geo-Inf.* **2024**, *13*, 227. [[CrossRef](#)]
47. Luna-Navarro, A.; Loonen, R.; Juaristi, M.; Monge-Barrio, A.; Attia, S.; Overend, M. Occupant-Façade Interaction: A Review and Classification Scheme. *Build. Environ.* **2020**, *177*, 106880. [[CrossRef](#)]
48. Askarizad, R.; Daudén, P.J.L.; Garau, C. Exploring the Role of Configurational Accessibility of Alleyways on Facilitating Wayfinding Transportation within the Organic Street Network Systems. *Transp. Policy* **2024**, *157*, 179–194. [[CrossRef](#)]
49. Yun, J. A Copy Is (Not a Simple) Copy: Role of Urban Landmarks in Branding Seoul as a Global City. *Front. Archit. Res.* **2019**, *8*, 44–54. [[CrossRef](#)]
50. Moghaddam, E.V.; Ibrahim, R. People’s Evaluation towards Media Façade as New Urban Landmarks at Night. *Archnet-IJAR* **2016**, *10*, 257. [[CrossRef](#)]
51. Loo, B.P.; Fan, Z. Social interaction in public space: Spatial edges, moveable furniture, and visual landmarks. *Environ. Plan. B Urban Anal. City Sci.* **2023**, *50*, 2510–2526. [[CrossRef](#)]
52. Hamidi, S.; Bonakdar, A.; Keshavarzi, G.; Ewing, R. Do Urban Design Qualities Add to Property Values? An Empirical Analysis of the Relationship between Urban Design Qualities and Property Values. *Cities* **2020**, *98*, 102564. [[CrossRef](#)]
53. He, F.; He, Y.; Sun, L. Gender Differences in Color Perceptions and Preferences of Urban Façades Based on a Virtual Comparison. *Build. Environ.* **2023**, *245*, 110907. [[CrossRef](#)]
54. Askari, A.H.; Soltani, S. The Role of Physical and Visual Elements in Creating Streetscapes: Cases in Kuala Lumpur City, Malaysia. *Alam Cipta Int. J. Sustain. Trop. Des. Res. Pract.* **2022**, *15*, 29–40. [[CrossRef](#)]
55. Fu, H.; Wang, P.; Zhou, J.; Zhang, S.; Li, Y. Investigating the Influence of Visual Elements of Arcade Buildings and Streetscapes on Place Identity Using Eye-Tracking and Semantic Differential Methods. *Buildings* **2023**, *13*, 1580. [[CrossRef](#)]
56. Kawshalya, L.W.G.; Weerasinghe, U.G.D.; Chandrasekara, D.P. The Impact of Visual Complexity on Perceived Safety and Comfort of the Users: A Study on Urban Streetscape of Sri Lanka. *PLoS ONE* **2022**, *17*, e0272074. [[CrossRef](#)]
57. Gjerde, M.; Vale, B. An Examination of People’s Preferences for Buildings and Streetscapes in New Zealand. *Aust. Plan.* **2022**, *58*, 36–48. [[CrossRef](#)]
58. Bharmoria, R.; Sharma, V. Sustainable Interventions to Improve the Degrading Visual Quality of Place and Street Spaces in Urban Hill Town of Shimla Region, Himachal Pradesh. *GeoJournal* **2023**, *88*, 5609–5626. [[CrossRef](#)]
59. Porta, S.; Renne, J. Linking urban design to sustainability: Formal indicators of social urban sustainability field research in Perth, Western Australia. *Urban Des. Int.* **2005**, *10*, 51–64. [[CrossRef](#)]
60. Lee, J.; Park, S. Current Design Guidelines’ Streetscape Improvement for Visual Perception and Walkability: A Case Study of Sejong City, Republic of Korea. *Front. Archit. Res.* **2023**, *12*, 423–443. [[CrossRef](#)]
61. Askarizad, R.; He, J. Gender Equality of Privacy Protection in the Use of Urban Furniture in the Muslim Context of Iran. *Local Environ.* **2023**, *28*, 1311–1330. [[CrossRef](#)]

62. Prieto, A.; Oldenhave, M. What Makes a Façade Beautiful? Architects' Perspectives on the Main Aspects That Inform Aesthetic Preferences in Façade Design. *J. Facade Des. Eng.* **2021**, *9*, 21–46. [[CrossRef](#)]
63. Zhang, L.; Zhang, R.; Yin, B. The Impact of the Built-Up Environment of Streets on Pedestrian Activities in the Historical Area. *Alex. Eng. J.* **2021**, *60*, 285–300. [[CrossRef](#)]
64. Buttazzoni, A.; Dean, J.; Minaker, L. Urban design and adolescent mental health: A qualitative examination of adolescent emotional responses to pedestrian- and transit-oriented design and cognitive architecture concepts. *Health Place* **2022**, *76*, 102825. [[CrossRef](#)]
65. Heffernan, E.; Heffernan, T.; Pan, W. The Relationship Between the Quality of Active Frontages and Public Perceptions of Public Spaces. *Urban Des. Int.* **2014**, *19*, 92–102. [[CrossRef](#)]
66. Rui, J.; Othengrafen, F. Examining the Role of Innovative Streets in Enhancing Urban Mobility and Livability for Sustainable Urban Transition: A Review. *Sustainability* **2023**, *15*, 5709. [[CrossRef](#)]

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