

Maintain Temporal Dynamics

What temporal characteristic needs to be preserved within the historic marketplaces of Palermo to encourage sustained interactions?

Abstract:

Immigration to Europe significantly increased in the 21st century, which challenges the integration of these immigrants. Palermo, is a significant destination for immigrants where tensions unfold between immigrants and locals. Many newcomers are economic immigrants seeking informal opportunities to secure their income in historical marketplaces where dynamic characteristics unfold. The aim is to identify the temporal characteristics that shall be retained within the historic marketplaces of Palermo, which encourage sustained interactions. The study uses Doreen Massey's theoretical framework on temporalities (2005) and Gehl's methods through an observational study (2013) in Ballaró and Vucciria markets. The results of the analysis demonstrate two market space typologies which encourage sustained interactions. Furthermore, five key spatial and social factors are defined as necessary to retain within historic marketplaces.

Keywords: immigration, sustained interaction, immigrant-local coexistence, marketplaces, temporality, social and economic inclusion

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1. Introduction

Over the past decade, immigration to Europe increased by 18% between 2020 and 2021 (Eurostat, 2023). This surge in the population is due to localised wars and considerable loss of habitats (Sassen, 2016; Montgomery, 2016). Italy is a significant destination for immigrants from Northern Africa, East Asia, and Europe (Comune di Palermo, 2021). However, the rise in illegal smuggling networks into Italy is host to many human rights issues. On the one hand, numbers rose due to criminal actions and environmental catastrophes in Northern Africa (Carney, 2021). On the other hand, the increasing number of people being trafficked to Lampedusa and Sicily is uncertain and dangerous (De Bruycker, 2013). The concern amongst many researchers is neutral on those committing to the journey as minimal resources are shared between them.

Across many Southern Italian cities, the distribution of immigrants is a concern as newcomers are undemocratically assigned a much greater percentage of residences compared to Northern Italy. Even if there are economic benefits for cities to accept immigrants, as they take on low-paying work that locals reject (Cole and Booth, 2007), their social integration is problematic. In Sicilian cities, the concern is the tensions between immigrants and locals that unfold due to cultural differences (Gutekunst et al., 2016). Palermo is a critical mediator between Lampedusa and Northern Italy. Over the 19th and 20th centuries, the middle and upper classes moved to the outskirts. Meanwhile, criminal forces surged in the historic centre (Schneider and Schneider, 2003), resulting in its physical degradation (Lo Piccolo, 1996). Consequently, the centre became a major attraction for immigrants to settle and form informal economic networks.

Liveability, access to employment, and socio-economic mobility are all human rights that economic immigrants seeking financial prosperity deserve. In informal economies, the illegalities and tensions between them and locals are unfolding due to the unresolved socioeconomic inequalities that immigrants face. The informal economies within the historic centre are crucial survival opportunities for immigrants, illustrating the significance of its study (Akiyode, 2017). Many economic immigrants trial informal vending on unauthorised lands such as residential and servicing streets (Lo Piccolo and Leone, 2018) and historic marketplaces on secondary commercial streets. Secondary streets are significant when discussing the tension between residents and immigrants as they are well-connected

to primary streets. Furthermore, these streets provide higher commercial prospects, which attract residents.

Previous research highlighted the urgency for revitalising the historic centre due to its physical degradation. These strategies outlined the historic marketplaces as a primary area to take action on (Wulff, 2020). Relevance to this focus includes the increasing number of low-income immigrants reliant on informal vending and the marketplaces' historical significance within the city. Therefore, the strategies infer the need to study the characteristics of historical marketplaces to suggest how to approach their continually dilapidating civic and built infrastructure.

The increasing number of immigrants and their informal practices present challenges in revitalising the city centre. Their socioeconomic characteristics can be defined by their propensity to change spatially, revealing the social characteristics of their practices (Kamalipour and Dovey, 2020). Therefore, the research focuses on studying the dynamism of historic marketplaces that demonstrate opportunities to ease tensions between immigrants and locals. As a theoretical framework, temporality is applicable and is defined through the incomplete nature of space (Massey, 2005). Temporality can be seen as both spatial and social processes. The former is viewed as the spatial morphology of space, and the latter is observed through encounters. Therefore, the research aims to define the temporal characteristics of historic marketplaces that shall be retained within historic marketplaces due to their physical degradation.

The research hypothesises that identifying temporal characteristics that shall be retained within the historic marketplaces of Palermo can gain benefits to the vibrancy and dynamism of the city.

The study's objective is to show which temporal characteristics can aid policymakers in developing alternative proposals for the revitalisation of the historic centre. Furthermore, the research provides a chance for a socio-spatial perspective which can support arguments on retaining the marketplaces' multicultural assets (Cole and Booth, 2016; Napoli and Bonafede, 2021) – such as the benefit to both immigrant and local citizens whose tension unfolds within them. Finally, this study is relevant to other Sicilian and Southern Italian streets of cities where informal vending activities are dominant. This can shed light on cities' informal, self-initiated employment structures that shall not and cannot be erased (Lefebvre, 1996).

An empirical visual assessment study is applied to study the temporal characteristics of marketplaces in Ballaró and Vucciria markets. Culturally diverse groups are investigated due to the difficulty in differentiating between the number of immigrants and residents (without implying bias). The theoretical framework investigates temporality through Massey's definition (2005). Three key concepts of her work can be applied in the historic marketplaces of Palermo to answer the following three research questions:

1. To what extent are the spatial characteristics of historic marketplaces temporal, measuring their spatial characteristics (through the theory of space as a process, constantly under construction)?
2. What spatial characteristics of marketplaces can be defined as everyday, and what can be seen as sustained by observing social actors (through the theory of space as a multiplicity of coexistence)?
3. What social characteristics of marketplaces are everyday and sustained measuring social interactions (through the theory of space as a product of interrelations)?

To answer the research questions, Section 2 introduces temporality as a theoretical framework by first discussing Doreen Massey's (2005) and Henri Lefebvre's (1996) definitions. Section 2 introduces the relevance of this research's empirical, observational methodology - using Doreen Massey's theoretical framework (2005). Gehl's and Sverre's research methods (2013). Section 4 research question by

research question presents the observational study's findings, and Section 5 discusses and concludes the relevant temporal characteristics of historic marketplaces that shall be retained.

2. Theoretical Background: Temporality's role in historic marketplaces

The temporal was introduced through the philosophical conceptualisation of sharing spaces (Foucault, 1980, p.70). As societies develop over time, new occupations and, in turn, spatial pluralities are formed. The historical understanding of space understood the temporal as the layering of urban forms. However, spatial pluralism opened diverse discussions on the temporal by analysing time and breaking it down into smaller intervals (Bergson, 1911, p.131; Deleuze, 1980). Here, Deleuze's conception of continuous multiplicity is implemented, where the small intervals are seen as infinite and indivisible. Based on this definition, temporality can be examined through the morphological changes within the city. Two theorists' works are relevant in the context of historic marketplaces' multiculturalism, describing temporalities through simultaneity: Henri Lefebvre and Doreen Massey (1996, p.19; 2005, p.48).

Lefebvre's *right to the city* captures the incompleteness and ever-changing nature of the city (1986). He states that citizens shall practice this over spatial use. He sees temporality as an openness that shall be allowed and located among the homogeneous forms that connect the spatial and the social (1996, pp.105-106). According to his views, the marketplace is a mediation (1996, p.107) since it is neither a fragment nor a homogeneous part of the city. When marketplaces are closed, they become spatially fragmented (divided into unused spatial segments) and homogeneous (for instance, used for residents to retreat for the night). Therefore, the temporal can be seen as a mediation that serves everyday life. Lefebvre believed such mediation between the two is not accidental but the condition of the urban form.

In comparison, Massey's understanding of spatial justice considered the differences between spatial occupations that require negotiation and constraints. Her emphasis highlights the proximity of social actors occupying spaces (2005, p.93) which derive from Giddens's understanding of exclusion based on distances (1984, p.192). This results in space's dynamic and plural characteristics. She described the *simultaneous* characteristic of space as a critical principle that is constantly present in temporal sequences (2005, p.23). Instead of seeing as fragmented elements, she considers space as always incomplete, which becomes temporal through social relations. These relations unfold negotiations across its spatial occupation to acknowledge its plurality (Massey, 2005, pp.9-13). Plurality illustrates that space constantly changes as social processes inform spatial alterations, which then alter social relations. (Massey, 2005, p.71). Based on Massey's understanding, temporalities are located where social relations occur.

Applying this concept to marketplaces suggests that Massey's concept is relevant. Marketplaces are understood as the collection of individual market spaces, open for alteration through the spatial occupation of merchants and visitors. These two groups enact new social relations through interactions. A temporality is created when a new spatial use occurs that makes a market space open for change (for instance, expanding a vending area). Based on Massey's theoretical understanding, temporality can be defined according to three conditions of space: process, constantly under construction, multiplicity of coexistence, and product of interrelations. These concepts need to be studied to reveal the marketplaces' temporal characteristics.

Firstly, by seeing space as a process, constantly under construction, allows marketplaces to be perceived as open-ended (Massey, 2005, p.107), which defines them as both spatially and socially temporal. Consequently, the characteristics of marketplaces can be divided into a continuous and indefinite number of events (Massey, 2005, p.23). These events are a sequence of spatial changes, and, as such, the market spaces' dislocation (removal and displacement of spatial characteristics) can be understood as a process that defines them within an open system (Bergson et al., 1911, p.43). For instance, a user might infer spatial change that impacts another spatial condition and; therefore, impose alterations elsewhere. This understanding shows that marketplaces and their market spaces can be observed through their spatial changes, locating their frequency and occurrences.

Secondly, investigating space as a multiplicity of coexistence acknowledges its simultaneity and spatial plurality (Massey, 2005, p.9). The social processes that change them can be seen as minor co-constitutions that are temporal in character (Massey, 2005). Once a social relation (interaction) ends, the spatial differs from the temporal. This concept demonstrates that the temporal influences the spatial; therefore, the spatial constantly changes (Massey, 2005.p.18). While the temporal can be reduced to an event, the spatial cannot. For instance, a vendor might change the market space that a pedestrian uses for commuting. This example presents that a singular event (a vendor altering its market space) can be described as temporal. At the same time, the marketplace (seen as the spatial) has plurality, which is defined by social actors. This concept suggests the significance of studying market spaces according to the location of social actors (users).

Thirdly, space as a product of interrelations can be viewed as a negotiation that informs temporal changes (Massey, 2005, p.9). These social alterations occur at the edges of market spaces' different spatial elements and can be described as social relations. These social relations (interactions) are negotiations that require a mutual opening of borders spatially and socially (Massey, pp.56-66). This understanding implies that an encounter requires two participants to acknowledge each other's presence and form a relationship temporally. This social condition is significant because, if mutual recognition is not provided (for instance, one social actor observes another social actor), there is no encounter and; therefore, no spatial change. Alternatively, the spatial change can cause tensions between social actors. This concept highlights the need to study social relations in marketplaces, revealing spatial changes.

2.2. Interactions as Social Temporalities: differentiating everyday and sustained encounters

The concept of social relations as drivers of spatial changes derives from public life studies (Jacobs, 1961; Gehl, 2010) to ensure the vibrancy of the street. These studies demonstrate the significance of examining spatial conditions that influence the number of social actors and interactions between them. Encounters can be defined as everyday or sustained, depending on their nature (Jacobs, 1961; Mayblin et al., 2016, p.213).

In some cases, everyday interactions can be seen as a pleasant exchange (for instance, asking a stranger for directions). However, these encounters can also be considered inconvenient or cause discomfort (for example, bumping into someone on the street). These are often established within unfamiliar contexts (Loukaitou-Sideris and Ehrenfeucht, 2009) and seen as the initial contact. Consequently, these encounters are not timebound, and; thus, they can be defined as temporal interactions (Maybin et al., 2016; Massey, 2005). In contrast, sustained interactions are decided by individuals before the encounter. These can be considered sustained upon contacting them for the second time, which can occur in a familiar context.

Therefore, the difference between the encounters infers that there is significance in observing the spatial characteristics that promote sustained interactions. As everyday interactions occur more frequently, these affect the spatial alterations within marketplaces. Consequently, accidental interactions, and the context in which they occur, must be observed to study sustained encounters. Furthermore, their situational characteristics present the need to uncover what spatial characteristics contribute to both everyday and sustained interactions within the historic marketplaces of Palermo.

3. Methodology

The historical marketplaces must be observed to present the temporal characteristics that shall be preserved in Palermo. An empirical study visually and qualitatively assesses the historic marketplaces (Ewing and Clemente, 2013). Although other marketplaces were considered, Vucciria and Ballaró markets are studied as these have a high ratio of informal vending and are well-connected to formalised high streets that attract many residents.

generate these by adding, removing, or dislocating their elements. The aim is to define where the highest alteration occurs and which spatial characteristic drives spatial changes (Lynn, 2004, p.44). For instance, it can be observed that the edges between transition and exchange spaces are constantly changing if many people and interactions are occurring within them. Therefore, these must be mapped according to the location of these changes (Gehl, 2010). Based on this, seven different spatial temporalities can be defined within the historic marketplaces in Palermo (see Figure 2):

1. Serving space
2. The edge between serving and transition spaces
3. The edge between serving and exchange spaces
4. Exchange space
5. The edge between exchange spaces
6. The edge between exchange and transition spaces
7. Transition space

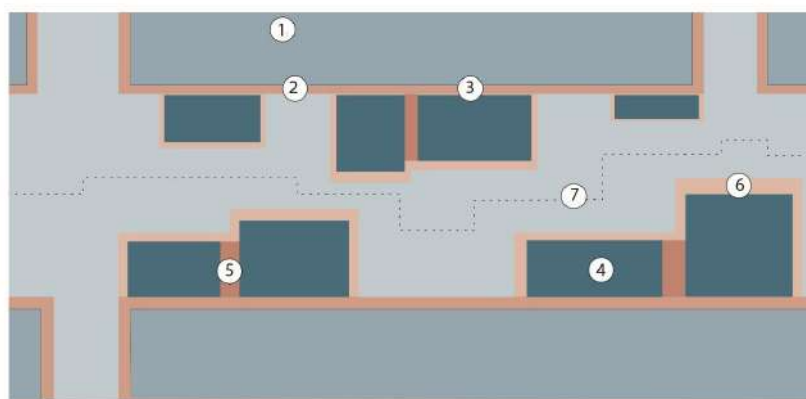


Figure 2: The Spatial Temporalities within historic marketplaces of Palermo

The study conducts a morphological mapping exercise using Gehl's soft and active edge methods. These methods can help quantify the spatial temporalities of Palermo's historic marketplaces. Firstly, soft edges are defined based on the transition between built fabric and public space. In this context, all spatial characteristics can be seen as soft edges as they constantly change. This concept can be applied to this research by examining the market space's size and frontage length. Secondly, active edges are defined based on the frontages' activity related to when a market space is open or closed. This approach can be applied to market spaces by examining opening days and hours. Therefore, spatial changes are mapped according to social actors' location.

Both marketplaces are observed at incremental intervals (hourly, daily and weekly) to establish the time in which spatial changes occur. The aim is to establish the time within which spatial temporalities are not changing and, therefore, are static (Tang and Long, 2019). This approach can be used to justify marketplaces' open-ended nature and define spatial factors that alter within them.

Applying the concept of *space as a multiplicity of co-existence*, spatial plurality can be observed in transition, exchange, and serving spaces (where people are present). For instance, a pedestrian might commute to the same area within the transition space where a market vendor wants to extend their exchange space. This demonstrates both users' need to negotiate over space, forming a temporality within which spatial alterations occur. Consequently, the users that inform these spatial changes must be identified according to their location and length of spatial occupation, using the spatial factors defined in section 3.1.1 (Pratt, 1992).

Social actors' location and length of spatial occupation can be mapped using Gehl's behavioural method. This approach can be applied to this study (Gehl and Svarre, 2013, pp.84-85) by observing pedestrian and stationary activities. Pedestrian transitions are movements between different spatial characteristics. In contrast, stationary activities are static, where users remain within spatial characteristics. Users' location is measured twice at three different times of the day (9 a.m., 12 p.m. and 3 p.m.) The aim is to define the number of people, differentiating market vendors, visitors, pedestrians, and stationary users. This will aid in differentiating everyday and sustained spatial characteristics of the marketplaces. Furthermore, it can help to define social actors within marketplaces which inform spatial changes, using the spatial factors established in section 3.1.

Using the concept of *space as a product of interrelations*, social relations can be seen through interactions based on the location of social actors. As the focus is on examining encounters between spatially different conditions, these are only observed based on the edges between transition, exchange, and serving spaces. Everyday and sustained interactions are differentiated between these edges to determine how these affect the spatial and social alterations (as presented in sections 3.1.1. and 3.1.2). For instance, market vendors often develop encounters with visitors at their counter space, where successful commerce can reinforce the exchange space's expansion. However, an encounter between two users of the transition space does not form spatial alterations in the marketplaces (as they do not withhold agency over trading spaces). Based on this, the study examines four edges where everyday and sustained interactions occur (see Figure 2).

Using Gehl's and Svarre's behavioural mapping method (2013, pp.84-85), encounters are observed based on the users' location in serving, exchange and transition spaces. Using this, the frequency and duration of encounters can be measured to distinguish between sustained and everyday encounters. An interaction lasting longer than five minutes is considered a sustained encounter. The study aims to define spatial and social characteristics (as presented in sections 3.1.1 and 3.1.2) that contribute to sustained encounters.

4. Results: Market space typologies that encourage sustained interactions

4.1.Space as a 'process, constantly under construction'

The study aims to define the extent to which the marketplaces are temporal. Firstly, the analysis presents differences between marketplaces using the seven identified spatial characteristics (serving, exchange, transition spaces and the edges between them). This can aid in defining the alteration rate within market space elements. Secondly, these observations are reasoned by highlighting the differences between market spaces. This analysis enables the identification of dependencies between the observed parameters (opening hours, opening days, frontage length, and area) that aid in defining spatial factors that alter the spatial characteristics of marketplaces.

Firstly, comparing Ballaró and Vucciria markets, the transition space demonstrated a highest alteration rate (minute-based changes), and exchange and serving spaces exhibited hourly and daily changes, respectively. The defined edges illustrate characteristics similar to how the transition, exchange, and serving spaces alter. For instance, the edge between the transition and serving space would present spatial change on a minute basis that matches the transition space. The minute-based alteration rates indicate that the changes in the transition space and associated edges result from direct social relations (interactions). In contrast, the daily and hourly changes of other spatial characteristics result from indirect social relations. These indirect encounters can be interpreted as deriving from more complex social relations between social actors based on market vendors' socio-economic position. For instance, one would enter the market space's serving space following a sustained encounter with the vendor. However, it is assumed that once market vendors become friendly with each other, and have performed multiple previous sustained encounters, they would be willing to allow each other to occupy the area of their exchange space when required. Therefore, minute-based changes need to be recorded through observation of the social actors and direct social relations (interactions). However, the hourly and daily

changes can be observed through the indirect social relations manifested in other market spaces' spatial occupations. These can only occur directly with neighbouring market spaces.

Secondly, the spatial factors that impact changes can be identified upon comparing the market spaces to each other. The hourly and daily spatial alterations are displayed through visual diagrams which investigate four spatial factors which were identified in section 3 (opening days and hours, area, and frontage length). The diagrams indicate that the market spaces with shorter opening hours and days are less likely to change (see Figure 2), whereas market spaces with longer frontages are more likely to occupy other spaces. This factor is more relevant in Vucciria market. The area of market spaces did not reveal any relevance to these factors (see Appendix 7.3.1 and 7.4.1).

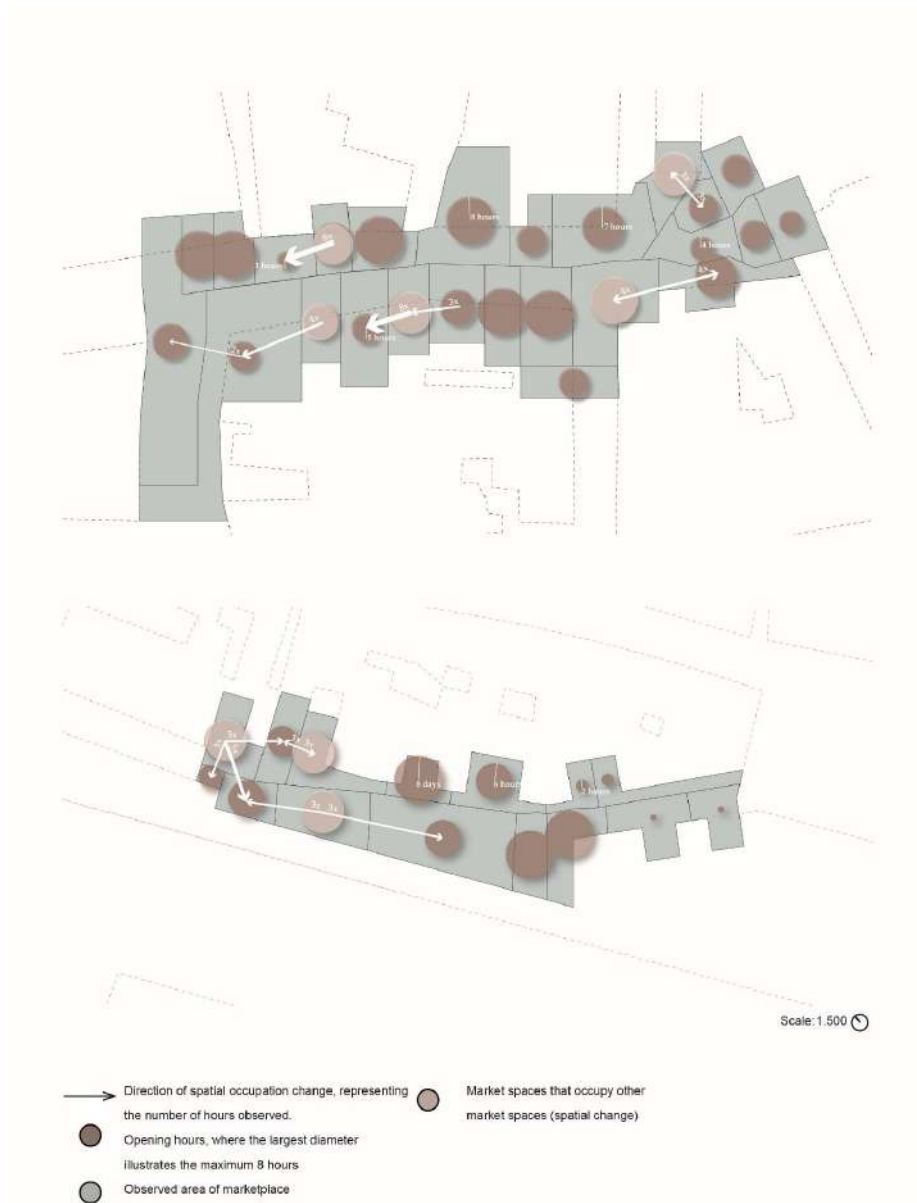


Figure 3: The number of open hours on a day indicated by the diameter size in relation to the direction of spatial occupations of neighbouring market spaces in Ballaró market.

Overall, both indirect and direct social alterations drive the spatial changes in market spaces. Differences were indicated between market spaces that are reflected in the frontage length, opening hours, and opening days. The correlations suggest that the alteration rate can be identified through these spatial factors.

4.2.Space as a ‘multiplicity of coexistence’

The study aims to define if the spatial characteristics of marketplaces can be seen as everyday or sustained. The analysis is based on seeing stationary and pedestrian activities as sustained and everyday spatial characteristics, respectively. Firstly, the number of social actors (pedestrian and stationary) and their roles (as vendors or visitors) are observed between the two marketplaces. Secondly, a comparison is made between the market spaces to understand the relationship between the number and role of social actors. Thirdly, the spatial factors (identified in section 4.1) are observed with regards to social actors to grasp the nature of their relationships qualitatively.

Firstly, comparing Ballaró and Vucciria markets, the analysis shows a similar number of market vendors. Furthermore, similar tendencies can be seen between the two marketplaces when comparing the observation times according to the number of pedestrian and stationary activities. Both Ballaró and Vucciria markets are host to high stationary and pedestrian activities at 12 p.m. However, Ballaró exhibits an average increase of more than 1.5 pedestrian users, with an average of 152 users in comparison to 90 in Vucciria market at 12 p.m. This exhibits a significant difference between the number of visitors between the two marketplaces, showing relevance at all observed times. Similar patterns can be noticed when assessing the spatial distribution of social actors. In the case of stationary users, the difference in distribution is insignificant (see Figure 5). Regarding pedestrian users, both Ballaró and Vucciria markets indicate the highest population of people in the transition spaces (see Figure 4). However, the comparison demonstrates a significant difference in pedestrian users, with an average of 100 users in Ballaró and 51 in Vucciria. Furthermore, serving and exchange spaces exhibit a similar number of everyday and stationary users, similar to the number of stationary users in the transition space for both marketplaces (see Appendix 7.3.2 and 7.4.2). This indicates that transition space generates a significant number of everyday users. However, none of the spatial characteristics can exclusively be defined as everyday. Therefore, the analysis infers that both everyday and sustained conditions are present within all spatial characteristics.

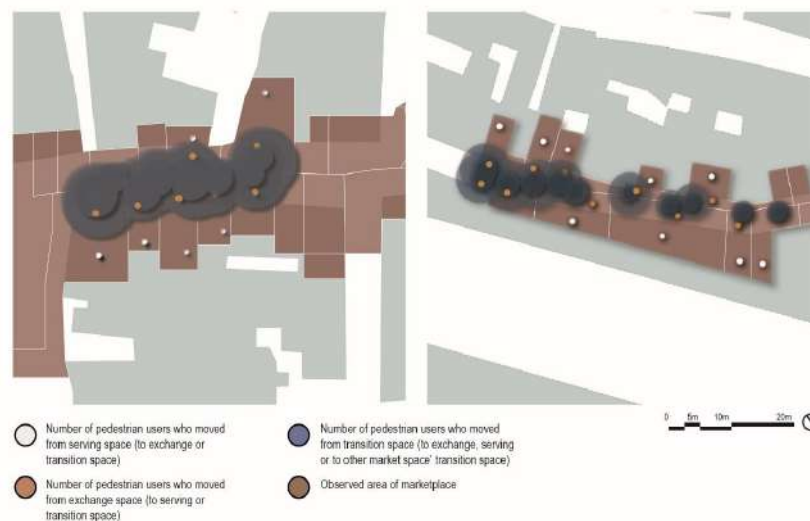


Figure 4: The average distribution of pedestrian users across spatial temporalities in Ballaró and Vucciria markets, showing significance to transition space.

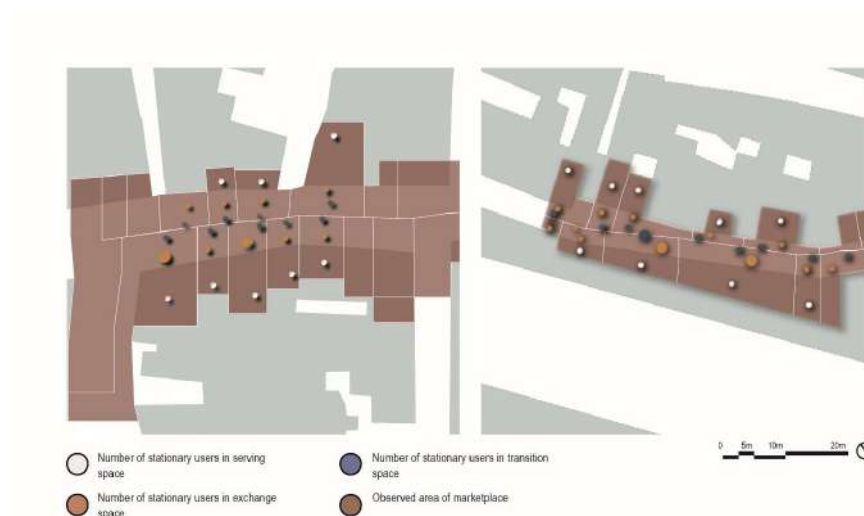


Figure 5: The average distribution of stationary users across spatial temporalities in Ballaró and Vucciria markets, showing significance to transition space.

Secondly, the market spaces are compared to understand the reason all spatial characteristics can be described in everyday and sustained conditions. This study can aid in defining the relationship between pedestrian, stationary, and market vendors. The observed relationship between the number of market vendors and pedestrian activities shows minimal positive correlation (see Figure 35). However, there is a positive connection between the number of people attracted to stationary activities and the number of market vendors. The analysis demonstrates that market vendors play a significant role in generating more sustained encounters. This positive correlation can be interpreted as the market vendors initiating encounters with visitors, encouraging them to become stationary users within market spaces.

When examining the relationship between pedestrian and stationary activities, differences were shown between the two marketplaces and between market spaces according to the measurement time. On the one hand, in Ballaró market, there is a higher density of stationary activities, where pedestrian movement is greater. On the other hand, Vucciria market suggests that the higher number of stationary users is not located in the areas with the highest number of pedestrian users. Both indicate that there is a positive correlation between stationary and pedestrian users. However, the case of Vucciria illustrates that, even if a significant number of pedestrian movement is needed, pedestrian users are widely distributed across all market spaces. This result can be interpreted as Ballaró market driving large pedestrian traffic, certain areas of marketplaces exhibit a high concentration of pedestrian users. Such areas are where a higher number of sustained activities occur in market spaces.

Thirdly, to understand what spatial factors explain the difference between the two types of market spaces, the results of section 4.1 are examined. Based on the comparison, a positive relationship is seen between the opening hours, the area of transition space, the overall market space, and pedestrian movement. The market spaces with shorter opening hours indicate a higher rate of pedestrian activities in both marketplaces. These trends can be interpreted from two differing perspectives: the market spaces might open for shorter periods to generate substantial income more quickly; or market vendors focus more on engaging visitors to make them stop.

However, when looking at the area of transition spaces and overall market spaces, a similar difference can be identified between the two marketplaces, as illustrated previously. In the case of Ballaró market,

the larger market spaces and transition spaces exhibit a larger pedestrian flow. In comparison, in the Vucciria market, those market spaces present the largest pedestrian flow, which indicate an average size. This difference is not apparent when comparing the two marketplaces' spatial factors and stationary activities. Both marketplaces show that stationary activities are indicative of a positive relationship between the area of transition space, the overall area, and the frontage length of market spaces. Consequently, the larger the area and the longer the frontage of the market space, the more stationary users can be accommodated.

Overall, it is possible to see that transition, exchange, and serving spaces all exhibit everyday and sustained spatial characteristics. The positive correlation between stationary and pedestrian activities was examined to understand this condition. This demonstrated how Ballaró and Vucciria market requires a high and average frequency of pedestrian activities, respectively, when the number of stationary activities is high. A similar pattern was indicated when looking at the relationship between the two types of activities and spatial factors. However, the two marketplaces did not differ when examining stationary activities. The results show that the differences are based on pedestrian activities instead of stationary ones. One potential interpretation is that the degradation of the city centre's physical civic infrastructure makes market spaces more accessible to economic immigrants. The dilapidation can be seen as relevant to the ratio of tourists and visitors that should be considered regarding the number and type of users.

Therefore, it can be concluded that seeing marketplaces as a multiplicity of coexistence is relevant to understand their ability to generate everyday and sustained spatial usage. Furthermore, a positive correlation was qualitatively observed between pedestrian and stationary activities. The differences between the two marketplaces suggest the importance of considering the ratio of tourists and visitors relative to the physical degradation of the marketplaces.

4.3.Space as a 'product of interrelations'

The study aims to define the social factors that are positively related to sustained encounters. Firstly, encounters are examined to compare marketplaces, differentiating their length of time (everyday and sustained). Secondly, market spaces are compared to observe the relationship between the two types of interactions. Thirdly, these differences are observed in relation to the results of sections 4.1 and 4.2.

Firstly, comparing Vucciria and Ballaró markets, the number of sustained and everyday interactions present similar trends according to the time of the day. The largest number of everyday and sustained encounters are exhibited at 12 p.m. This shows similarities to the observations in section 4.2. However, differences are indicated in the overall number of encounters, as Ballaró market hosts twice the number interactions across the day compared to Vucciria market. Similarly, the same patterns can be observed between the two marketplaces in accordance with the location of interactions. In Ballaró market, most encounters happen between exchange and transition spaces (see Figure 6). Furthermore, everyday interactions are observed more frequently in Ballaró market than sustained interactions. In comparison, in Vucciria, interactions are equally distributed (see Figure 7). Moreover, the two types of encounters are equally spread across transition, exchange, and serving spaces in Vucciria.

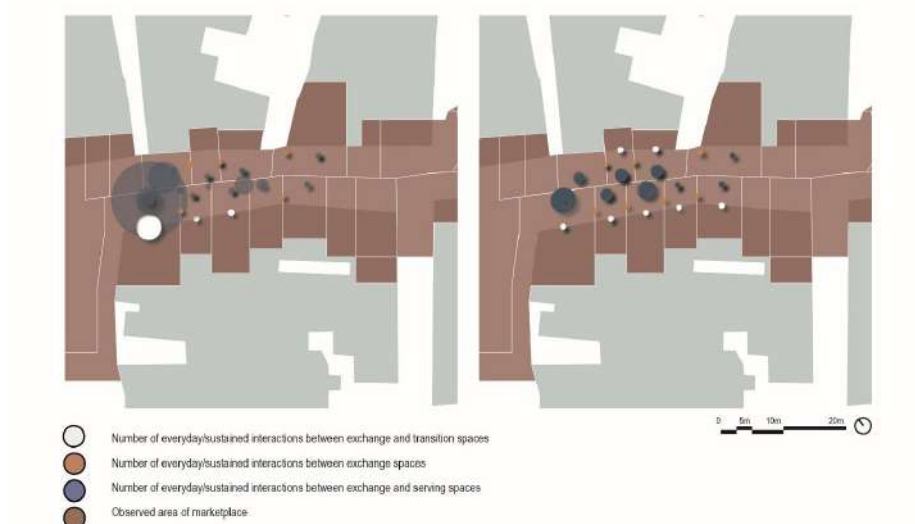


Figure 6. The spatial distribution of everyday (left image) and sustained (right image) interactions in Ballaró market, showing similarities between a higher proportion of encounters between transition and exchange spaces.

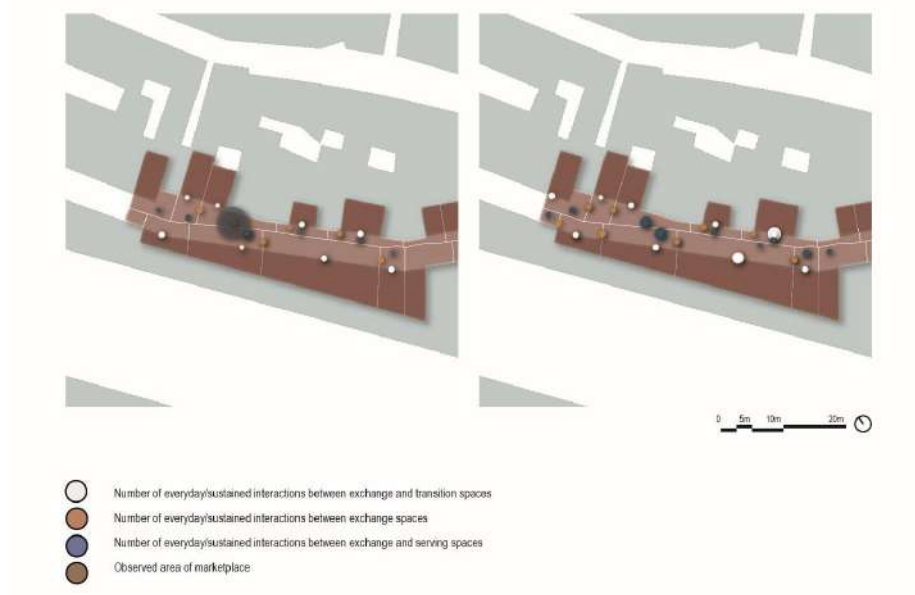


Figure 7. The spatial distribution of everyday and sustained interactions in Vucciria market, showing an equal distribution of interactions across all spatial characteristics.

Secondly, the market spaces are compared to understand the differences in the spatial distribution between the two marketplaces. Looking at the relationship between everyday and sustained interactions, both marketplaces suggest a higher number of sustained interactions in areas with a high number of everyday interactions. However, there are differences in where they occur. In the first case, there are market spaces that are host to the highest ratio of everyday encounters between exchange and transition spaces (as displayed in Figures 6 and 7). When relating these market spaces to sustained interactions, many are held between transition and exchange spaces. However, these market spaces demonstrate a larger proportion of everyday interactions between exchange and serving spaces. In the second case, market spaces show an average number of everyday encounters between exchange and transition spaces. However, these present the highest number of sustained interactions in the same area. Furthermore, these exhibit a higher proportion of sustained encounters between exchange and serving spaces. The analysis indicates that everyday interactions can be a catalyst in forming more everyday encounters within the marketplace. More crucially, there are two different scenarios when a high number of sustained interactions are observed. The spatial factors (illustrated in section 4.1) and social actors (presented in section 4.2) must be examined to understand the reason for these differences.

Thirdly, different positive correlations are presented when comparing spatial and social factors to sustained and everyday interactions. Opening hours, size, and pedestrian users positively connect to everyday encounters. As illustrated in section 4.2, pedestrian activities positively relate to larger opening hours and areas. Looking at the relationship between everyday and pedestrian users, everyday encounters are reproduced if there is a high pedestrian flow. Ballaró market was particularly susceptible to this, being host to the highest number of everyday encounters at these times. When examining sustained interactions, relevance is given to the size, frontage length, and number of stationary activities. As shown in section 4.2, stationary activities positively relate to frontage length and size of market spaces. A positive correlation exists in the relationship between stationary users and sustained interactions. The results show that sustained encounters are spread more widely within the market spaces in both the Vucciria and Ballaró markets. In contrast, everyday interactions are concentrated in certain areas of the marketplace. This pattern indicates that the spatial distribution between the two types of encounters generates two spatially different market spaces where a high number of sustained interactions occur.

In the first scenario, market spaces demonstrate a high number of everyday and an average number of sustained interactions between the transition and exchange space. Furthermore, there is a high number of sustained and everyday encounters between the exchange and serving spaces. As there is a high pedestrian flow, this exhibits shorter opening hours and an average size of market spaces. In this case, everyday interactions generate sustained encounters between the exchange and transition spaces. Furthermore, everyday interactions benefit the generation of sustained ones, mainly between the exchange and serving spaces.

In the second case, market spaces demonstrate an average number of everyday interactions (compared to the first) and a high number of sustained encounters between the transition and exchange spaces. Furthermore, between the exchange and serving spaces, a low number of everyday and an average number of sustained interactions are indicated. In the case that there is an average pedestrian flow, these market spaces are often bigger and can be open slightly longer. In this case, everyday interactions in the transition space generate sustained encounters, mainly between the transition and exchange spaces.

Therefore, the two scenarios infer that the hypothesis must be correct, and there can be beneficial spatial and social constructs where everyday interactions aid in developing sustained ones. It must be understood that Ballaró market is host to more market spaces than Vucciria market. However, Vucciria market holds more examples of the second market space typology. It must be noted that both market space typologies are present in the two marketplaces. The difference is in the user number, and the number of market spaces demonstrated. Consequently, the spread of market spaces needs to be considered regarding the condition and affordability of buildings for immigrants.

5. Discussion and Conclusion: Temporal characteristics that encourage sustained interactions

5.1.Key findings

To study the temporal characteristics which shall be retained within Palermo's historical marketplaces (Ballaró and Vucciria). Temporalities are studied through Massey's framework (2005) in three analyses, using Gehl and Svarre's empirical and observational methods (2013). Firstly, the extent to which marketplaces are temporal is discussed, identifying spatial factors that alter them. Secondly, marketplaces are studied through social actors that enable distinguishing everyday and sustained spatial characteristics. Finally, everyday and sustained interactions are observed in relation to the identified spatial and social factors.

The research concludes that five key spatial and social characteristics contribute to sustained interactions: the area of market space, the length of frontage, the area of transition space, opening hours, and the number of vendors. These temporal factors manifest in two market space typologies that show beneficial social and spatial constructs where sustained socio-spatial constructs occur. The result infers that marketplaces' spatial and social characteristics should be maintained and encouraged when considering how to regenerate Palermo's historic centre. To accommodate the differences in temporal factors, economic accessibility, physical degradation (civic and built), affordability, tourist appeal, and social integration must be considered. In contrast, the regeneration will not address those socio-economic realities that immigrants inevitably face.

5.2.Contextual factors

Firstly, based on the analysis of spatial factors, the differences between marketplaces showed relevance to land value that influence spatial changes. When comparing the immigration rate and sales value of Palermo's neighbourhoods, both marketplaces are located in the areas with the lowest values (Napoli and Bonafede, 2022, pp.1281-1282). Ballaró market has an immigration rate of 20%, whilst Vucciria market has an immigration rate of 17% (Napoli and Bonafede, 2022, p.1275). Additionally, Ballaró market, on average, has a lower sale value per unit than Vucciria market. These indicators suggest there is a higher association with illegalities and black economies within these areas. The higher immigration and lower sales value in the neighbourhood of Ballaró market suggest that criminal forces have become more prevalent. Therefore, criminal forces can impact immigrants' accessibility to marketplaces, their socioeconomic status and where spatial changes occur.

On the one hand, if forceful incentives continue to be implemented, informal practices would significantly decrease in the historic centre. Such incentives already include the documentation of supply chains, formal registration of business transferral, taxation after commercial activities, and rented property (Comune di Palermo, 1995; *ibid*, 2021). Consequently, these would continue to reduce the survival activities of immigrant workers. On the other hand, if the dominant actions of criminal forces continue, these will keep altering the temporal practices within the marketplaces. The lack of governance can strengthen black economies, posing challenges to economic growth due to untraceable and untaxable supply chains. Furthermore, these can expose highly unattractive illegalities (such as vandalism and violence) to locals and tourists, reducing marketplaces' attractiveness.

Bottom-up incentives (such as SOS Ballaró and Associazione Mercato Storico di Ballaró) implemented strategies to promote the self-management of marketplaces (Wulff, 2018). These strategies benefited immigrants by indicating the necessity of engaging with local communities and authorities to maintain the spatial dynamism of the marketplace. However, as there is an increasing number of economic migrants and a lack of formal employment, these initiatives need to be considered by local governmental bodies. The self-management of the marketplaces must be encouraged by a regeneration policy involving the participation of locals and market vendors. Furthermore, these need to consider criminal forces that may irresponsibly expand them. Such self-management can be applied by reviewing the existing social infrastructure provision for immigrants (including skill-building and social security).

Secondly, based on the analysis of social actors, there is a difference between Ballaró and Vucciria markets regarding the number of pedestrian users caused by their touristic appeal and physical civic degradation. As presented in Chapter 3, Vucciria is less accessible through pedestrian networks and further away from primary tourist hubs than Ballaró market. These differences can be indicated by comparing these observations to the sales and rental value of high streets (Napoli and Barbaro, 2022, pp.1281-1282). The highest unit sales value can be seen around Vittorio Emanuele and the second section of Maqueda (see Figure 8). These areas are near the key tourist attractions and Politeama, where high-value shops are located. In contrast, the lowest unit values are in the first section of Via Maqueda, which significantly dropped between 2017 and 2020. This decrease in sales value is suggested in both sections of Via Roma, but their unit sales value is closer to the value of Via Maqueda's first section.

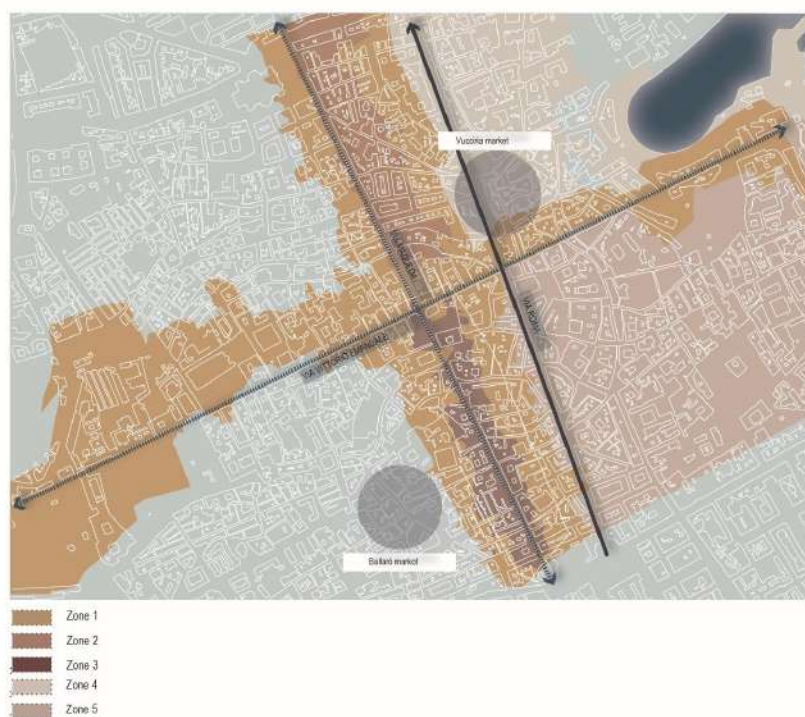


Figure 8. Sales and rental value differences between high streets, figure adapted from Napoli and Barbaro (2022, pp.1281-1282).

A significant difference can be seen between Vittorio Emanuele and the first section of Via Maqueda when looking at the rental value of high street shops. This difference indicates that the marketplaces' location has likely devalued over time, with a more substantial drop in the Ballaró market. The decreasing value can be interpreted as an accessibility issue in Via Vittorio Emanuele, reducing the number of tourists visiting the marketplace. Instead, many users access it from Via Maqueda's first section. Furthermore, the value decrease can also be understood as being due to the higher rate of immigrants within these neighbourhoods (Napoli and Bonafede, 2022, p.1275). However, Ballaró market's proximity to the highest sales value area attracts more tourists than the Vucciria market. Therefore, the analysis shows that regeneration plans must consider the physical civic condition of marketplaces to improve their accessibility and visibility, considering their differences in land value. However, upgrades to physical civic infrastructure must also be proposed with the understanding that

it will raise the property and land values of the areas. Consequently, these market spaces will become less accessible for immigrants to settle and form informal practices.

Finally, the two market typologies derive from the different spatial distributions of everyday and sustained interactions. In Ballaró market, there are more market spaces where a high number of sustained encounters occur in the transition space. In comparison, in Vucciria, these are within the exchange and serving spaces. Therefore, the physical condition (regarding affordability) and social integration (in relation to tourism) need to be considered for future proposed development strategies. On the one hand, in the first scenario, the strengthening of transition spaces can be challenging due to the constrained area between exchange spaces. However, these can be addressed more quickly and allow the continuous running of market spaces. On the other hand, the second scenario, where the exchange and serving spaces require improvements, demonstrates accessibility constraints by large vehicles, restrictions due to the historical setting, and the displacement of market vendors. Furthermore, those market spaces that perform well in generating sustained encounters are dilapidating the most. This negative correlation suggests that accessing these buildings and developing a higher-performing business is only a temporary solution for vendors. This is due to the building's lack of maintenance and the inhabitation of squatters, reducing safety and hygienic conditions.

Therefore, both scenarios indicate that there are difficulties in regenerating marketplaces, and there is a need for affordable incentives for economic immigrants. Contrastingly, the regeneration will result in the dispersal of immigrants into various city segments instead of allowing them to remain within the historic centre. Furthermore, both marketplaces presented a high tourist appeal and opening hours and days that responded to their need. This approach, and the lack of safety around marketplaces, demonstrates why residents avoid entering marketplaces within and beyond tourist periods. Consequently, regeneration strategies must encourage the expansion of the marketplace's opening period to attract more residents and develop better connections between them and immigrants.

5.3.Outlook

The current research findings conclude that the identified temporal characteristics shall be retained within the marketplaces should be considered regarding the broader regeneration of the historic centre. The devaluing of the area attracts many immigrants and causes tensions between them and the residents. Such conditions are influenced by the increasing number of immigrants, the difficulty of their social integration, criminal forces' control over the marketplaces, and the physical degradation of buildings and civic infrastructure. Therefore, to accommodate for sustained encounters within the historical marketplaces, five key requirements must be granted and achieved: social infrastructure provision, self-management of the marketplaces, upgrading physical civic infrastructure to improve the accessibility of marketplaces, affordability of market spaces for market vendors, and extending usage time to attract various social groups.

However, it must be noted that the validity of the results is restrained to the analysed case studies, and the conclusions are essentially qualitative, as the data used to conduct the analysis are not quantitative. The empirical research is, based on observations, beneficial to studying the socio-spatial conditions of these secondary streets where informal economies dominate. Further studies on the historical marketplaces of Palermo and other marketplaces within Sicily and Southern Italy would better this study. Collating additional spatial and social data from wider street networks, using digital scanning methods and observational studies, would be beneficial. Moreover, the study could be expanded to observe different types of streets where informal economies are dominant to give suggestions on how these findings relate to other informal practices.

Similarly to Palermo, many other Sicilian and Southern Italian cities demonstrate similar patterns. To consider the regeneration of decaying historic centres, the study shows that it is crucial to preserve informal economies due to their indispensable ability to ensure marginalised groups' liveability. Therefore, maintaining the temporal characteristics of historic marketplaces plays a significant role in resolving tensions between culturally diverse groups.

6. Data statement

The research has undergone ethical approval, by the Welsh School of Architecture's Research Ethics Committee (SREC reference: 23021).

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