Can Public Space be a Platform for Social Innovation? A Study of Sannomiya, Kobe, Japan

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ABSTRACT
This paper explores public open space as a platform to strengthen social capital networks and, in turn, support the regional social innovation system. Design, location and user perception were found to be central determinants in attracting and retaining users for social capital development.


JEL CLASSIFICATION: D01, D02

1. INTRODUCTION
The Stanford Social Innovation Review regards the “free flow of ideas, values, roles, relationships, and money across sectors” as central to driving social innovation capital and affecting enduring social change (Phills et al., 2008). More recently, the term “social” has moved from being tied to a specific institutional form to include any combination of enterprise, government or non-profit organization (Phills et al., 2008). This suggests that social innovation capital and networks can be formed in “third places” (first and second places being where people respectively live and work; see Oldenburg, 2001), such as public open space, to benefit the regional social innovation system (RSIS). The RSIS is increasingly relevant to economies targeting innovation as “region-specific conditions and cooperation relationships between different actors influence the regional innovation potential either positively or negatively” (Revilla Diez and Kiese, 2009, p. 247). Emphasizing innovation at the regional or local territorial scale places a high importance on tacit (face-to-face) knowledge with more connected environments facilitating the speed of localised learning and knowledge transfer, and consequently the rate at which innovation can be produced (Revilla Diez and Kiese, 2009).

Martinus (2012) noted human diversity within and movement through a particular space in Kobe Japan was related to the diversity of amenity and infrastructure. She observed a high correlation between user frequency to the space and the likelihood of an unplanned meeting, suggesting they were measures of a spaces’ capacity to strengthen regional social capital. This paper extends this analysis finding that the design, location and positive user image of the space were likely elements in attracting and retaining users. Positive user perception was concluded to be a greater indicator of attraction to the space than occupational profile and, as such, part of the spaces’ broad appeal. This paper contributes to emerging discourse on the role of public “social” space in building and strengthening boundary-spanning local social innovation networks and, in turn, the whole RSIS.
2. INNOVATION: A PUBLIC GOOD

Theories of innovation focusing on the production of new goods as the result of diffusion or adoption of new knowledge follow linear neoclassical regional development models (Mytelka and Smith, 2002; Simmie, 2003). By in large, innovation is seen to be the result of “rational investments in research and education” (Simmie, 2003, p. 609). This perspective assigns high value to the ideas, knowledge and information within firm operational and business processes, and views innovation as an output characterized by patents, copyright and trademarks (McElroy, 2002). It downplays innovation as a social process of human creativity occurring both in- and outside the firm. McElroy (2002) suggested social innovation capital was a distinct form of social capital, measurable in the firm by “the relative health of an organization’s community of communities, as well as the quality of its breeding grounds” (p. 33).

Viewing social innovation as occurring outside of an organization recognizes the boundary-crossing benefits of collaborative knowledge (Holst, 2007). This is supported by examination of the relationship between “space” and innovation. Burt (2004) found individuals who operated between formal groups were not only more likely to have “good” ideas, but less likely to have these ideas dismissed. Nonaka and Toyama (2007) reported the importance of **ba** or social place (physical or virtual) in enriching interaction and exposing individuals to different ontological viewpoints. They felt that challenging what was known (from one’s own perspective) enhanced the innovation process through new knowledge and contexts. Penn et al. (1999) suggested that planning buildings for worker interaction would be particularly useful for organizations relying on innovation. They found that offices were a “system of spaces” where worker interaction patterns were statistically dependent on the density of movement in any given area.

Whilst these studies focus on organizations, others, such as Salingaros (1999), explored these ideas in the context of urban space. He noted that an “information field” is generated by the “physical use of space” by a pedestrian’s interpretation of the surrounding infrastructure (including buildings) and the structure of the open space itself. He found this created a crisscross of user flows where “every functioning urban space is anchored on a network of connective paths” (p. 41). He proposed that pedestrians engage with a space where fixed (such as street furniture) or temporal (such as clusters of pedestrians) nodes cause pedestrians to pause even fleeting. In addition, comfort with a space, as a tactile information zone free of threats (such as cars) will encourage users to stay longer and provide a “complex user experience” (p. 43). Martinus (2011) suggested that urban space concentrated knowledge resources in its capacity to attract and retain users, providing a platform for tacit knowledge exchange and social networks. She thought that incorporating such urban form into public space could enhance socio-economic factors of a city by increasing knowledge development and innovation. Such studies point to the central role everyday urban space can potentially play in enhancing accessibility to knowledge and ideas and, in turn, contributing to RSIS.

Indeed, as noted by Oinas and Malecki “[innovation systems] exhibit different spatial configurations. They may originate in one place, but often they are spread beyond local, regional, and even national borders” (p. 103). It becomes logical that in order for innovation itself to be a truly social good, responsibility for its creation, production and dissemination must be taken out of the organizational space and placed in a public one. Public space, in its capacity to build social capital by attracting and retaining people, may contribute to the efficacy of the RSIS. The following explores user movement through, as well as perception and attraction of users to a public open space outside of a train station in Sannomiya, Kobe. It aims to examine the attractiveness of public space given the importance of this in assessing its potential contribution to social innovation.

3. METHODOLOGY

This paper extends the analysis of Martinus (2012) by exploring user engagement with and attraction to public open space through an analysis of user movement in, user perception of and attraction to a

popular public open space in Kobe, Japan. Martinus (2011) found Kobe to be a highly innovative city (ranked 37th according to 2009 2thinknow Innovation Cities Index), “adapting relatively easily once the political shift towards knowledge-based production occurred despite previous struggles as an industrial economy (p. 152).

The survey site is one of several busy exits outside the City of Kobe’s central train station, Sannomiya, where the lines of Hankyu, JR, Hanshin, Portliner and its subway converge. It is a small open civic space situated adjacent to the northern Hankyu exits of the station (Figure 1) and a popular meeting place centrally located in Kobe City, as well as to its amenities. These include retail, education, business and financial services, eating places (fast food, cafes, restaurants, etc), leisure (karaoke, bars, etc) and tourist activities (etc). Users attracted to the site include local residents, commuters and tourists (from other cities and countries). While the movement of people waiting in and flowing through the space was consistent with expectations of any space outside of a busy train station, the site appeared to be a major point of contact for a cross-section of the local and international communities. This made it highly appropriate to explore the research question.

Figure 1: Sannomiya Station Location and User Activity in Survey Site (green/orange dot)

As noted in Martinus (2012), eighty users were approached to participate in a survey during a one-week period - with 20 users asked in each of the four time slots of (1) evening (between 4pm to 8pm) and (2) daytime (between 10am to 2:30pm) during the weekday (Monday-Thursday), and (3) evening and (4) daytime during the weekend (Friday-Sunday). This method aimed to capture why different users were drawn to the site, with the evening representing peak travel times and daytime non-peak periods. User volumes at the site during non-peak weekday (between 6-9 people at any given time) were lower than any of the other 3 time periods (between 10-30 people). Only people sitting or standing in the site were asked to participate - not those passing through or waiting on its verge for buses or other transport modes. Language issues were avoided as the researcher spoke Japanese to Japanese and English to non-Japanese participants.
Martinus (2012) provided the results of a survey conducted to examine user feeling and rationale for being at the site, as well as the likelihood of meeting someone unexpectedly. She concluded that high user frequency indicated the general high attractiveness of the site (62.5% respondents coming either every day (15%), twice a week (17.5%), once a week (12.5%) or once every two weeks (17.5%)). A positive correlation was found between the number of times a respondent visited the survey site and the likelihood of an unexpected meeting. Whilst this points to the site’s potential to strengthen local social networks, regression analysis found only 41% ($R^2$=0.408) chance of being able to predict whether someone will bump into a friend serendipitously based on how often they came to the site. Martinus conjectured this probability represented a site’s capacity to generate boundary spanning social capital connections, thereby increasing the efficiency of knowledge transfer between actors in a RSIS.

Observations of user movements through the space to surrounding amenity and infrastructure were used to map a network of pedestrian connectivity points in the space. User perception of the space and its relationship to user type was ascertained by applying destination image and multiple correspondences analyses (MCA) to the data from three survey questions: 1) “what is your occupation?”; 2) “why did you come here?”; and, 3) “what is the feeling of the space?”.

Whilst destination image analysis is most often employed to assess a city as a tourism destination, this paper uses it to assess overall user image of the study space within Kobe. This presumes that the study site acts as a “tourism” destination competing with a multitude of other spaces within the city to attract users. As noted by Matlovicova and Kolesarova (2012), a location’s image plays a large role in determining its success, given that “a strong and distinctive image [has] higher resistance to unexpected shocks” (p. 6). That is, if the destination image of particular place is strong enough users will overlook (or ignore) negative images not conforming to its stereotype and continue to be attracted to it as a destination. Understanding how users perceive a particular space is an important factor in determining the reasons users are attracted to that space. Over the last few decades, place development is seen as more dependent on destination image than actual reality (Echtner and Ritchie, 2003; Gallarza et al., 2002; Marino, 2008; Matlovicova and Kolesarova, 2012). Therefore, understanding the place image of the space outside Sannomiya Station is a critical component in predicting its capacity to attract users to engage with the space beyond its transport transfer function.

Destination analysis was applied to the survey questions “why did you come here?” and “what is the feeling of the space?” to determine user perception of the space. Responses were ranked across the spectrum of attributes to characteristics as per Echtner and Ritchie (2003), Gallarza et al. (2002), Marino (2008) and Matlovicova and Kolesarova (2012). These were then grouped into seven themes to reduce data (themes of: work/school/transport/transfer, shopping/tourism, meet friends/fun/easy to find, relax/hang out/people watching, negative/youth drinking smoking, lively/bands/youth/foreigners, trendy/international/big city feel) and combined in a Burt Table along with responses to third question “what is your occupation?”. MCA was conducted to identify patterns in the data using the statistics package STATA.

These patterns provided insight into the relationships between qualitative data categories to better understand the imagery of different user types and their attraction to the study space. These relationships were expressed as dimensions, with eight emerging from the analysis. Dimensions are calculations of the largest deviations of independence between variables (in this case, user type and imagery of the site). They are computed so as to generate the smallest number of dimensions, where each dimension accounts for an increasing lower proportion of the deviation. The first two dimensions were taken to be most important and plotted; associations between variables in each dimension were identified through points clustered in the same quadrant or vicinity (see explanation of MCA in Rencher, 2002). Distribution of user perception (imagery) by user occupation revealed attraction differences between user groups to the space.
4. ANALYSIS OF DATA

In general, the site could be described as organic with pedestrians standing in and walking through creating its ever-changing landscape. This added to its vibrancy and unique human narrative. At any one time during non-peak periods, there were between 2 and 11 different groups of people gathered and waiting for more friends to come. During the weekend and peak periods, there were 5 to 20 groups of various sizes. Weekend groups included those meeting for reoccurring events, for example, a group of 25 Mormon missionaries from different countries who had come for their monthly meeting at the site as well as approximately 100 members of a walking club who nominated the site as a starting point. Observations of pedestrians through the site suggested commuter flows with most heading North or Northwest from the station to Kitanozaka (street name) and Flower Road in the morning and towards the train station from these streets in the early evening. These flows were not as apparent after around 6:30pm with greater movement towards Kitanozaka – famous for its fashionable restaurants and vibrant nightlife. Whilst the high volume of users demonstrated site popularity, it could also mean lower capacity to support human interaction and community networks with increased density having a negative effect on social capital formation (see Glaeser & Gottlieb 2006; Glaeser et al. 2001).

Over the last few decades, its significance as a meeting place has earned it nicknames associated with three stone-paved bumps rising from the ground at the site. Some of these are: The Humps (by foreigners), Oppai Yama or Oppai Koen or O-Yama (by younger people, translating to Breast [Mountain] Park) and Sankaku Koen (by older people, translating to Triangle Park). Though it is difficult to identify when the park was adopted into Kobe’s subculture, a web search of YouTube, blog, Facebook, (etc.) postings using these nicknames illustrates its iconic status (e.g., Busan, 2009). Glancing over the park early morning before commuter flows began, the researcher felt its largely plain grey stone and steel construction was more prominent than other features such as trees and a naked bronze statue (four torso’s and butts merged together). Nevertheless, this lack of “first glance” aesthetic appeal appeared to have little bearing on its above-average attraction and retention of users, instead providing a plain “canvas” which absorbed the color and movement of surrounding fluorescent signs and people at busy times.

Bertolini and Dijst (2003) noted that the centrality of a space to the city and a variety of urban functions can account for its diversity and frequency of human contact. Observations at the site found its broad demographic contributed to its vibrancy and visual interest. Figure 2 illustrates participant breakdown by age and occupation. The large presence of employees (34%) and students (25%) is consistent with the space being close to Kobe’s major business district and several large universities. Housewives (16%) were also prominent, including young mothers with children (over 20 years) to elderly ladies (over 60 years) married to retirees. There were considerably less self-employed (6%), volunteers (5%; all being female), retirees (4% all being males; same aged females wrote down “housewife”) and part-time jobs (4%; all being women). Employees and self-employed were more likely to be observed at the site during the day, housewives during weekday evenings and students on weekends. Observations found it was popular meeting place for the elderly despite a sometimes large number of loud youth, as well as working holiday visitors and tourists who were present in numbers disproportionate to Kobe’s actual foreign population. Indeed, 16% of participants were non-Japanese from countries such as USA, Australia, New Zealand, Colombo, Samoa, Indonesia and Ghana. As a result, the space was found to offer a range of experiences from the antics of “ordinary” users to the performance of indie music bands and street entertainers to the color of alternative youth (e.g., emo, mod, punk).
Sitting in the park, the researcher was aware of the interesting subtle textures created by the angle of the sun and shadow of users on the uneven surfaces of its cobblestones, brick paving, metal tube seats, stone blocks, trees and the statue. Even at peak commuting times when the site’s design elements made it appear crowded and ad hoc, it was clearly legible and permeable for pedestrians with high visibility at eye-level. The low height of architecture (benches, humps) and high canopy of the trees allowed a clear view through the park enabling users to understand how it connected with its environment. It appeared to demonstrate the four design elements cited as critical for successful urban space: legibility, permeability, vitality and visuality (see Moughtin, 2003). The space also provided multiple points of “unplanned” contact and interaction, with its architecture (e.g., metal benches and scattered stone seats; see Figure 3 insert) arranged in a way which interrupted linear pedestrian movement of various possible home, work and leisure journey combinations. This potentially served to both invite users to stay and created a complex web of human activity lines and interaction points within the small space (Figure 3).

Figure 3: User Movements through the Space as They Negotiate Objects (see insert for layout of the space) within the Space

Source: Adapted from Google Maps and Google Earth

To Kitano Tourist area along Kitanozaka
To Sannomiya entertainment and shopping
To Kitano Tourist area along Flower Road
To Sannomiya business district
The irregularity and curvature of pedestrian lines at the site aligns with multiple connectivity principles in Salingaros (1998), who observed that pedestrians gained the most pleasure in the multitude of possibilities offered by a curved path over that of a pre-determined linear path. Similarly, Huang (2006) noted greater social interaction occurred in spaces which facilitated movement over those with seating or which were “vague”. Indeed, it is possible that the layout of “the humps” forced users to engage with the space as they made conscious decisions regarding the path they would take to negotiate around the objects in it. This is likely to contribute to a familiarity and comfort with the space, making it relaxing and a logical meeting place. As noted by Salingaros (1999), the “absence of anxiety” is critical in “motivating a person to be [in a space]” (p. 42).

This “comfort” with the space was supported by the majority of survey participants who stated they frequented the space often and for extended periods. Many noted the space was a convenient meeting point, with comments like “everyone knows this place” as it “is close to the train station” (25%) and “close to other major destinations in the city” (28%). As one respondent stated “it is easy to find people as it is not too big and there are not too many people. It doesn’t feel like a passageway or like you are in the way. It doesn’t have too many exits unlike inside the train station where there are too many people flowing through and exits everywhere”.

Negative comments regarding the space focused on the night-time rise in litter (25%) and anti-social behavior/feelings of insecurity (24%). The latter including “too many people”, “not so safe”, “scary at night”, “pachinko players (gamblers)”, “undesirable people”, “panhandlers”, “dangerous and scary at night”, “noisy at night”, “too many drunks” and “mizushobai” (referring to night activities of bars and escort services). 9% cited a lack of comfort (e.g., seats, protection from sun and rain), 7% the pollution from cars in the streets around the space and 3% were Mormons offended by the naked statues. However, given the range of other possible meeting places around the train station, it was concluded that the benefits of the space outweighed the negative feelings or criticisms of these users.

This was supported by destination image analysis (see figures 4 and 5). As noted earlier, analysis was conducted by assigning attributes to the reasons why users were in the site (functional quantifiable characteristics) to general impressions (intangible feeling) of the site. The breadth of which could be divided into six diverse but overlapping image components as per the axis labels of figure 4 (Echtner and Ritchie, 2003; Gallarza et al., 2002; Marino, 2008; Matlovicova and Kolesarova, 2012). Figure 4 organizes user responses regarding functions of and feelings evoked by the space. In doing so, it documents the imagery of the space. Following Matlovicova and Kolesarova (2012), figure 5 illustrates the strength of each as measured by the user response rate. The majority of users found the space to be vibrant and fun, as well as having strong associations with shopping and meeting friends. Positive imagery (block color) was overwhelmingly stronger than negative ones (striped), indicating the generally good perception users had of the space.

The greater positive perception of the space points to its general attraction and good “experience”. This aligns with observations that users appeared comfortable in the space. Indeed, a large number of respondents reported waiting for friends, resting or passive interaction with the space (e.g., “people watching”). 14% commented on its convenience to specific activities, such as shops (11%), restaurants and other eateries (3%) and sightseeing (1%). 12% felt its strengths were aesthetic. For example, some noted that its cleanliness allowed users to relax in the sunshine (10%), while others that it was classy and hip (3%), had a traditional and modern blend (1%) or a big city atmosphere (1%). 10% mentioned its vibrancy and attraction to different types of people.

Many reported people-watching (including “noisy with lots of different people”, “lots of youth” and “love it”) and enjoying live bands. Research observations supported this as many people did not appear to be waiting for someone in particular, but passively enjoying the activity of the space. Some even left briefly to buy a drink and return. Others were observed sitting for long periods several times during the 2-week observation period. Two participants reported that they regularly spent over 6 hours waiting for their part-time work to start - “hanging around” the space because “it always had something interesting happening”. Survey comments reflected a user comfort with the space. Some
users noting it “killed time”, “added interest to their life” and was why they were sitting at the survey site - “it (the site) always has different things going on, like a foreigner doing a PhD survey”. Non-Japanese survey participants (foreigners) particularly enjoyed the survey and engaging with the researcher. These feelings of comfort were observed to increase with higher site occupancy, with more users willing to participate in the survey during peak periods than non-peak periods. This may be because cautious participants were more likely to participate if they were given an opportunity to watch the non-threatening engagement of the researcher with others.

**Figure 4:** Destination Analysis using Comments on Atmosphere of and Reason for being at the Study Site Ranked according to Echtner and Ritchie (2003)

**Figure 5:** Strength of Responses for Each Destination Image Component (response rate)
Multiple correspondence analyses was applied to explore the association between the qualitative response data categories, that is, the imagery of different user types attracted to the space. Eight dimensions emerged from the analysis. The first two dimensions were associated with only around 37% of the data (see figure 6). The first dimension separated the data more heavily via imagery of the space (or experience in the space), and the second dimension via user type. Dimension one (26.9%) explains significantly more of the data than dimension two (10%), which is not significantly more than dimension three (9.5%) and dimension 4 (9%). This implies that the way users perceive the space is more significant than their employment status (or user type). Full-time employees appeared to be more broadly distributed across both dimensions than all other user types, with self-employed, student and part-time employees having similar distributions. Students (slightly) and full-time employees (more strongly) were negatively affected by dimension 2, whereas all other groups were positive. These two user groups were least associated with the image groupings of meeting friends, negative feelings and shopping/tourism (see below legend for full description). The intersection of all user types was largest in the upper right quadrant, pointing to the overall positive contribution in both dimensions. The positive perception across all user groups was likely to significantly contribute to the spaces’ broad appeal in terms of diversity in both people and activities.

**Figure 6: Distribution of Destination Images by User Type**

5. CONCLUSION

Public spaces which attract and encourage the interaction of people support social capital formation by increasing the potential for boundary-spanning connections. This paper explores the potential of a popular Kobe City meeting place to attract and engage users by mapping movement through, user perception of and attraction to the space. It found that the design layout (users engage with the space as they negotiate a path around its design elements) and physical location (adjacent to city central train station) of the space are conducive to user attraction and engagement. It suggested that these factors contributed to the familiarity and comfort of users with the space, making it a popular meeting and relaxation place. Further analysis revealed overwhelming user positive perception of the space as a destination (or experience) rather than its function as a point of transport transfer. This positive image was identified as more significant in user attraction to the space than occupation profile. Given that urban form can be a platform for social capital development benefiting the wider RSIS, there is an economic and policy imperative to better understand the design, location and user perception aspects of urban space as determinants of user attraction.

6. ACKNOWLEDGMENTS

I would like to acknowledge and thank the referees for their invaluable suggestions in the analysis.
7. REFERENCES


