An exploration of social systems as informative for urban regeneration in Potchefstroom Central Business District

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Abstract

The future of cities undoubtedly spells change on many levels due to urban growth. One of the mechanisms used in cities to cope with change is urban regeneration. Urban regeneration has mainly been addressed through economic and planning policies geared towards physical renewal, with hardly any understanding or acknowledgment of the social dynamics underlying the physical process. Social dynamics are important to consider in urban regeneration, as they form the underlying driving forces of cities. However, little is known about these underlying forces. The aim of this research is to explore the role of social systems in the Central Business District of Potchefstroom. An ethnographical approach is used to guide the methodology, while qualitative methods (observations and interviews) are used to capture data about the social systems that are present in the study area, how these social systems interact with one another, and how they can be included in urban regeneration initiatives. The findings suggest the existence of three interactive social systems that reflect pro-social behaviour and cultural relativism which, in turn, create vitality in the study area. Social systems play a multi-levelled role in the study area. Their role can possibly inform urban regeneration by being proactive in terms of attracting new and maintaining existing social relationships; being creative in terms of adapting and changing the physical environment to address needs, and being supportive in order to unlock internal resources such as local knowledge, creativity, commitment, energy and ownership.

Keywords: complexity, Potchefstroom Central Business District, social systems, urban planning, urban regeneration, qualitative research

'n VERKENNING VAN SOSIALE SISTEME AS INSIGGEWEND VIR STEDELIKE VERNUWING IN POTCHEFSTROOM SE SENTRALE SAKEKERN

Die toekoms van stede voorspel ongetwyfeld veranderings op vele vlakke as gevolg van verwagte stedelike groei. Een van die meganismes wat aangewend word in stede ten einde veranderings te kan hanteer, is stedelike regenerasie. Stedelike regenerasie is in die verlede hoofsaaklik aangespreek deur ekonomiese en beplanningsbeleide wat gerig was op fisiese hernuwing, met min begrip of inagneming van die sosiale dinamiek wat die proses onderlê. Sosiale dinamika is belangrik om te oorweeg in stedelike regenerasie omrede dit die onderliggende dryfkrag van stede is. Min kennis is egter beskikbaar aangaande hierdie onderliggende kragte. Die doel van hierdie navorsing is om ondersoek in te stel na die rol van sosiale sisteme in die Sentrale Sakekern van Potchefstroom. 'n Etnografiese benadering is gebruik om die metodiek te rig, terwyl kwalitatiewe metodes (waarnemings en onderhoude) gebruik is om data te versamel aangaande die sosiale sisteme wat teenwoordig is in die studiegebied, die aard van die interaksie tussen hierdie sosiale sisteme en hoe die sisteme in stedelike regenerasie ingesluit kan word. Die bevindinge dui op die teenwoordigheid van drie interafhanklike sosiale sisteme wat pro-sosiale gedrag en kulturele relativisme reflekteer wat vitaliteit in die stedelike ruimte meebring. Sosiale sisteme speel 'n veelvlakkige rol in die studiegebied. Dit kan stedelike regenerasie moontlik rig in terme van die pro-aktiewe rol in die lok van nuwe sosiale interaksie en die behoud van bestaande sosiale interaksie, die kreatiewe rol in die aanpassing en verandering van die fisiese omgewing ten einde behoeftes aan te spreek en 'n ondersteunende rol ten einde hulpbronne soos plaaslike kennis, kreatiwiteit, verbondenheid, energie en eienaarskap te ontsluit.

Sleutelwoorde: komplesiteit, Potchefstroom Sentrale Sakekern, sosiale sisteme, stadsbeplanning, stedelike vernuwing, kwalitatiewe navorsing

1. INTRODUCTION AND BACKGROUND

It appears that urban growth is one of the most compelling challenges for cities in the future. The United Nations (UN) (2014) projected that by 2050, 66% of the world's population will be residing in urban areas. Rapid urbanisation is even more prevalent in developing countries (Yaakup, Zalina & Sulaiman, 2004: 2). South Africa, for example, has one of the highest urbanisation rates in the world (Yari, 2011: 6). It is projected to have an urban population percentage of 77% by 2050 (UN, 2014). Rapid urbanisation creates numerous challenges that seem to revolve around a few main interrelated issues such as spatial challenges due to development pressure to provide housing and infrastructure (Beall & Fox, 2009; Cohen, 2001); environmental challenges such as a decrease in urban green space as a result of urban sprawl and urban densification (Nyambod, 2010); economic challenges such as creating employment opportunities (Grant, 2012: 4), and social challenges due to an increasing agglomeration of people, which brings various cultures into closer contact as they share the same spatial environment (Hendrix, 2009: 4; Couch & Dennemann, 2000: ; Rosado, 1994: 2). Viewed as cultural "melting pots" (Carnevale, Cohn, Kent, Maki, Malsawma, Skolnik & Yin, 2007: 3), cities are becoming progressively complex social phenomena to study. The future of cities undoubtedly spells change on many levels, leaving cities with little option but to adapt and adjust to accommodate these challenges.

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One of the strategies used in cities to cope with change is urban regeneration (Chan & Lee, 2008: 243).[1] Robert & Sykes (2005: 17) define urban regeneration as: "A comprehensive and integrated vision and action which leads to the resolution of urban problems and which seeks to bring about a lasting improvement in the economic, physical, social and environmental condition of an area that has been subject to change." In the past, urban regeneration was mainly addressed through economic and planning policies geared towards physical renewal, with little understanding or acknowledgement of the social dynamics underlying the physical process (Pulselli, Ratti & Tiezzi, 2006: 132; Stouten, 2005: 4; Tsenkova, 2002: 11). It is important to consider social dynamics in urban regeneration, as they form the underlying driving forces of cities (Lee & Chan, 2010: 9; Comunian, 2010: 426). Social dynamics manifest through people's interaction and behaviour, which can either be supportive (*e.g.*, voluntary cleaning and/or protecting areas from crime) (Nel-lo, 2010), or negative and disruptive (*e.g.*, crime and vandalism) (Randolph, 2008). This is probably why authors such as Stouten (2005: 7) and Lee & Chan (2010: 252) emphasise that understanding and incorporating social dynamics in urban regeneration is critical for the sustainability of these initiatives.

According to Yari (2011: 5), acknowledging and including social systems in urban regeneration processes in a country such as South Africa may become increasingly important, because challenges of urban growth have to be addressed within a culturally sensitive environment (Yari, 2011: 5). However, little is known about these underlying forces in the urban environment, and the role of social systems in terms of urban regeneration seems to be unclear in urban planning research. The primary aim of the study is to explore social systems in a specific context (Potchefstroom Central Business District), in order to illustrate how social systems can inform urban regeneration initiatives. While the findings are not necessarily representative of other Central Business Districts, the study indicates the importance and complexity of social dynamics in the urban context. Based on the aforementioned, the main research question that guided this study is: What is the role of social systems with regard to urban regeneration? Secondary questions include: What urban social systems are present in a specific research context? How do these social systems interact with one other? How can urban social systems be included within urban regeneration?

1 The term 'urban regeneration' is sometimes conflated with urban reconstruction, urban revitalisation, urban renewal, and urban re-development. According to Robert & Sykes (2005), these terms represent different paradigms related to regenerating cities. The latest paradigm, according to Robert & Sykes (2005: 17), suggests an integrated process that incorporates physical, environmental, economic and social goals to ensure a sustainable future. For this reason, the term 'urban regeneration' is used throughout this article.

2. CITIES AS COMPLEX SOCIAL SYSTEMS

A system is a set of interacting and interdependent parts and/or processes that share mutual characteristics in terms of its structure, parts and/or behaviour to form an integrated whole (Mitchell & Newman, 2002: 3). While simple systems are low maintenance, singular linear structures with one flow line (Bejan & Merkx, 2006: 2), *e.g.*, a conversation between two people, complex systems are high order, multiple and non-linear feedback structures made up of numerous interacting parts (Mitchell & Newman, 2002: 2). A complex social system is a system that consists of groups of people related to one another through persistent relations (Nakagawa & Suwa, 2010: 5) that culminate in a dynamic flow system of multiple organisations, patterns and hierarchies (Bejan & Merkx, 2006: 2). Societies are complex social systems in which cities form subsystems (Mega, 2000: 5). Cities are "the highest form of social organisation" (Newman, 2010: 17) and thus complex urban social systems in themselves.

The value of urban social systems does not reside in the components of the system, but rather in the dynamic interaction that results from the interplay of the components (Cilliers, 2010: 57). It is from this interplay of interaction that meanings arise and richness of the system is created. Meanings are, in this instance, not merely a result of characteristics of the system, but rather emerge from the characteristics of the relationships formed within and by a particular complex system. Therefore, the elements or constituents of a complex system have no representational meaning by themselves, but only in terms of patterns of relationships with other elements/constituents. Instead of aiming to determine or describe the components/constituents of a system, a general understanding of such a system is rather gained by understanding the nature of the relationships that are formed (which form the focus of this article).

Urban social systems form a complex intricate network that drives the social dynamics in a city (Cheng, Masser & Ottens, 2008: 14). However, people and space cannot be separated when social interaction is considered, because space is regarded as more than a neutral backdrop in which human activities unfold (Rose, 1995; Thrift, 2003; Hubbard, Kitchin & Valentine, 2004; Hague & Jenkins, 2005). In complex urban social systems, various interacting 'parts' of the social system work together to construct the platform for social interaction in a city's public spaces (Newman, 2010: 6; Zhang, Shengsheng, Fath & Yang, 2011: 14). Social interaction is necessary to keep public spaces in urban areas alive and vibrant (Holland, Clark, Katz & Peace, 2007). As a result of social interaction, people's behaviour influences how urban space is experienced (McMichael, 2000).

3. CITIES OF HOPE AND CITIES OF FEAR

According to Newman (2010: 15), cities are experienced as cities of fear or cities of hope. Cities of hope foster positive social relationships

and are characterised by long-term focuses, cooperation and partnership, and the utilisation of opportunities to improve the physical environment (Devlin & Chaskel, 2010; Newman, 2010). On the contrary, cities of fear disrupt social relationships and create hostile environments that may lead to social decline due to panic, fear and mistrust of people (Newman, 2010: 6). Social interaction consists of verbal (*e.g.*, conversations) or non-verbal (actions or body language) interaction that manifests in people's behaviour patterns (Mooney, Knox & Schacht, 2007: 54). Behaviour influences social cohesion, while social cohesion is related to social sustainability (Berger-Schmitt, 2000: 5). Newman's cities of hope seem to have greater potential to create social cohesion and are, therefore, more likely to be socially sustainable than cities of fear. If the 'hope' dimension is experienced more strongly than the 'fear' dimension, urban regeneration initiatives are more likely to be successful, as people will be more prone to actively take part in the process (Newman, 2010: 23). However, just as planners have to understand space in order to transform it (Mayer, Van Bueren, Bots, Van der Voort & Seijdel, 2004: 405), they also have to understand social dynamics, as these are the underlying forces for creating cities of hope or fear. A 'social mindset' is suggested as point of departure for urban planners in which the people dimension is integrated into urban regeneration initiatives in order to create cities of hope.

Rosado's (1994) theories of ethnocentrism and cultural relativism are perhaps useful to understand social dynamics and interaction in urban space. Ethnocentrism views social systems exclusively (from the perspective of one's own culture), and in a close-minded and culturally insensitive way (*e.g.*, regards own culture as superior). While ethnocentrism is not necessarily negative in itself, as it creates group identity and a sense of belonging, it becomes negative when one group (*e.g.*, one social system) becomes the reference against which others are judged or related to. Applied in this way, ethnocentrism can disrupt social cohesion and cause a decline in social interaction; it is, therefore, prone to create cities of fear.

Cultural relativism, on the other hand, suggests a more inclusive, more open-minded and culturally sensitive point of departure (Wells, 2007: 2). The level of sensitivity and respect people have for other cultures support and establish positive interaction or disrupt social interaction (Carnevale *et al*., 2007: 3). Cultural relativism is a culturally sensitive frame of reference (Rachels, 1999: 3) that is appropriate for a multicultural society and urban environments where people from diverse backgrounds share the same space. Cultural relativism provides a possible frame of reference for a social mindset with regard to social systems and is viewed as a positive and insightful platform to observe social interaction (Wells, 2007: 5). Cultural relativism supports strengthening social interaction and improves social relationships and is, therefore, prone to create cities of hope.

Intervention in the urban landscape (such as urban regeneration) without understanding and integrating the underlying social forces may compromise the sustainability of cities, because social dynamics (and, therefore, social systems) cannot be separated from the physical environment in which social interaction takes place. Urban regeneration, widely recognised as a coping mechanism to address the global decline and deprivation in cities (Tsenkova, 2002: 11), seems to need re-thinking and re-focusing on the role of people, as it has until now focused much more on economic and physical design (Healy, Davoudi, Tavsanoglu, O'Toole & Usher 1992: 6; Tsenkova, 2002: 11) than on the social dimension.

4. URBAN REGENERATION: PLANNING FOR CITIES OF HOPE OR CITIES OF FEAR?

Planners and urban designers play a prominent role in urban regeneration, as they guide the implementation of change in landscapes (Gallent, Juntti, Kidd & Shaw, 2008) and influence how the spatial environment eventually unfolds (Mayer *et al*., 2004: 409). It is believed that the future of planning is increasingly concerned with mediating different interests in terms of envisioning and implementing change (Gallent *et al.,* 2008: 23) while building consensus is viewed as a future priority in spatial planning (Gallent *et al*., 2008: 29). Therefore, the literature on planning emphasises a growing need for community participation and stakeholder involvement in spatial planning initiatives (*e.g.*, urban regeneration) (Albrechts, 2004). Including people in spatial planning is important, because the successful implementation of change is only as good as the support among various stakeholders (Cantrill & Senecah, 2001). Hendrix (2009: 4) also agrees with this view, as inclusion unlocks social resources such as local knowledge, creativity, commitment, energy and ownership, which are key ingredients for the success of urban regeneration.

Formulating urban regeneration initiatives and implementing them without understanding social dynamics or social systems tend to alienate people from one another, as well as from their environment (Rauch, 2002 5). Alienation induces fear and panic – characteristics of Newman's cities of fear – which is not conducive for a sustainable social environment. Acknowledging urban regeneration as a social process (apart from being economically and physically design-oriented in nature) will at least alert planners to the intricate complexities of the social systems underlying areas earmarked for regeneration. Incorporating social systems in urban regeneration creates a better likelihood to create cities of hope, while by ignoring social systems planners may subconsciously contribute to creating cities of fear.

The literature section implies that maintaining and incorporating social dynamics, such as the relationships between and among social systems, meanings that arise from it and the complexity of the systems, need to be understood when physical interventions (*e.g.*, urban regeneration initiatives)

Figure 1(a): Study area: Potchefstroom, North-West Province, South Africa
Source: Authors

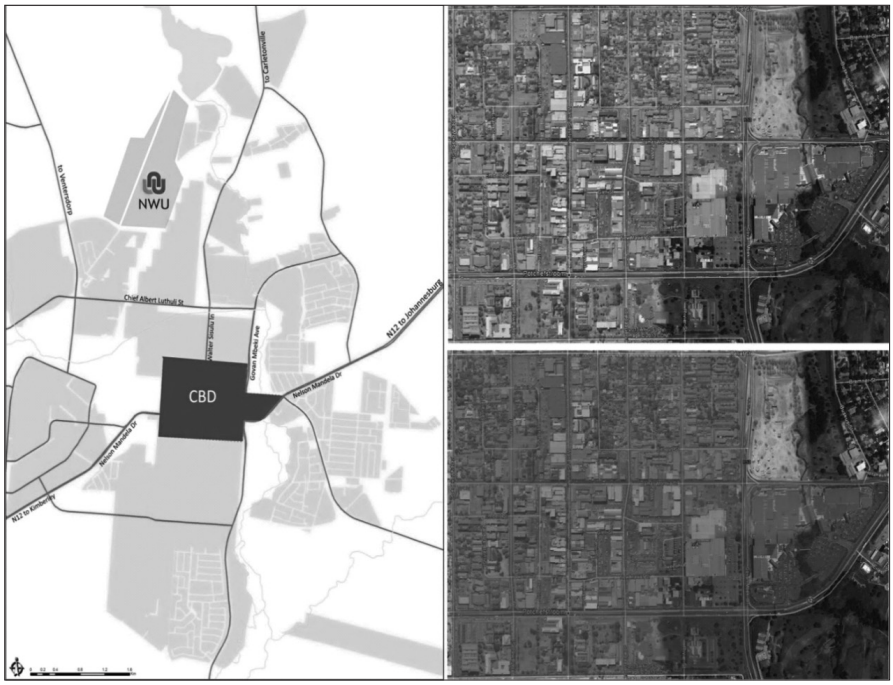

Figure 1(b): Study area: Potchefstroom Central Business District
Source: Authors

are proposed, because physical planning/design cannot be separated from the non-visible context (*e.g.*, social aspects). With this in mind, the empirical section of this article will discuss possible methods and tools to explore social systems in a Central Business District.

5. THE STUDY AREA

The study was conducted in the Central Business District of Potchefstroom in the North-West Province (see Figure 1a & 1b). While metropolitan cities in South Africa tend to focus a great deal on urban regeneration, small and medium-sized cities tend to ignore it. However, small and medium-sized cities should not underestimate the urbanisation process (Medina, 2013: 14), as they are potential redevelopment hubs (Medina, 2013: 370) that can change the total face of the city on a physical, social and economic level (Medina, 2013: 372).

Potchefstroom is an example of a medium-sized[2] city that is a primary regional node and a growth area in the North-West Province (RSA, 2005). According to Statistics South Africa (2012), between the 2007 and 2011 census, the decentralisation of higher order commercial activity in urban centres countrywide has been as much as 29%. In Potchefstroom, the decentralisation of the private sector away from the urban centre has been a problem for the past fifteen years, creating room for informal economic activity (Maxim Planning Solutions & Bigen Africa, 2006). The Southern District Joint Development Forum (SDJDF) stated that decay in medium-sized cities such as Potchefstroom usually occurs in fast and concentrated intervals – potentially making them fertile ground for urban regeneration initiatives.

Tlokwe Municipality emphasised the need for social understanding within an economic sphere, as indicated in their mission statement (Maxim Planning Solutions & Bigen Africa, 2006 2), which refers to social understanding as the foundation for economic and physical revitalisation. Exploring social systems in the Central Business District of Potchefstroom may be rewarding to inform future urban regeneration in smaller cities that form potential future growth points where urban regeneration initiatives have not fully been developed.

6. RESEARCH DESIGN

6.1 Research approach

The research is based on an interpretive approach that acknowledges the fact that realities and meanings are context bound (Nagy & Viney, 1994; Willis, 2007: 222). This approach allows for a meaningful and holistic understanding of embedded experiences (Klunklin & Greenwood, 2006) that occur spontaneously in their natural settings (Snape &

2 A medium-sized city is defined as a city with a population of between 50 000 and 500 000 (Vey & Forman, 2005: 5).

Spencer, 2003: 7). An interpretive approach is appropriate for this study, because it leaves room for the documentation of the subjective nature of real-world phenomena from different viewpoints, as this approach acknowledges multiple perspectives (Willis, 2007: 193); it allows for the uncovering of unanticipated findings, and acknowledges the contextual embeddedness of social dynamics in urban environments. While the interpretive perspective is relatively new in planning, this approach offers a way to integrate social and cultural meanings in the physical realities of space (Davoudi, 2012: 432). Interpreting particular places as the context for the application of spatial intervention (*e.g.*, urban regeneration initiatives) is important for spatial planning, as planning theories sometimes tend to develop concepts devoid of contextual references (Allmendinger & Tewdwr-Jones, 2002: 34).

In this instance, a qualitative research approach is particularly useful as an inductive, naturalistic[3] approach to investigate unfamiliar research topics (Babbie & Mouton, 2001; Creswell, 1998; Leedy & Ormrod, 2014), where the focus is on underexplored phenomena in spatial planning for which known variables do not exist (Creswell, 2005). Qualitative research does not aim to be representative of a larger population, as the focus is on obtaining an in-depth understanding of concepts within a context, rather than focusing on presenting evidence in quantifiable terms and extrapolating it to other contexts. However, it may offer wider lessons and alert planners concerning aspects not previously acknowledged.

3 A research design in which participants are studied in their everyday environment (Coolican, 2014: 137); an approach in which the social world is studied in its natural state, undisturbed by the researcher (Punch, 2014: 126; Sarantakos, 2013: 45). It is also used as a technique for data generation that is as unobtrusive as possible (Denzin & Lincoln, 2011: 467).

6.2 Methodology

Characteristics of ethnography were used to guide the methodology for the study in order to explore the nature of a particular social phenomenon rather than the setting; work with unstructured data; explore one case in detail rather than numerous cases/settings, and interpret meanings and functions of human actions by analysing verbal data. Using an ethnographical approach, in this instance, allows for greater flexibility, as it evolves contextually in response to the lived realities encountered in the research field (Bless, Higson-Smith & Sithole, 2013: 353; Flick, 2014: 42; Ritchie & Lewis, 2004: 1) and has the potential to generate rich data about social behaviour and the relationship between social groups (social systems, in this instance) (Babbie, 2014: 312; Mertens, Cram & Chilisa, 2013: 160; Wolcott, 2001: 13).

6.3 Data generation

Observations and interviews were conducted to generate data about the social systems present in the research context; how social systems interact with one another and with their spatial environment; the behaviour patterns that emerge from the interaction, and people's perceptions as input for urban regeneration (Miles, Huberman & Saldaña, 2014: 37; Sarantakos, 2013: 237).

Non-participant observations were used to generate data without extraneous interference in normal everyday contexts (Creswell, 2014: 190; O'Leary, 2014: 231; Silverman, 2011: 233; Maree, 2007: 84; Wolcott, 2001: 21). The observations were conducted within the time frame of 07:00-19:00 daily and on various spots in the study area over a period of one month.

The following guidelines and tools guided the data-capturing process: making initial anecdotal field notes of what was seen, heard and experienced by the researcher; making running records, supported by photographs containing detailed descriptions of actions, reactions and situations; verbal and non-verbal data were captured, reflecting on the data in terms of the theory and using broad structured categories of behaviour, interaction and groups (based on theory) to conduct observations in the area (Maree, 2007: 85-86). The observations were followed up by interviews.

Seventy five (75) semi-structured face-to-face interviews were conducted in total with individuals from all the social systems identified during the observation phase (McBurney & White, 2013: 225). Convenience sampling (Idemudia, Kgokong & Kolobe, 2013; Ritchie & Lewis, 2004: 81), commonly used in qualitative studies, was used due to the accessibility and availability of participants. The sampling criteria used to select participants included participants who are inhabitants of Potchefstroom, who use the CBD frequently (5-7 days per week) and who are able to express themselves verbally. The participants included males (61%) and females (39%), with ages varying between 27 and 56 years. A Tswana-speaking translator who is fluent in Afrikaans, English, Xhosa, Tswana, Zulu and Sotho was used to ensure that participants were interviewed in their mother tongue. All interviews were recorded and transcribed *verbatim* (Gomm, 2008: 210).

The interviews included broad open-ended probing questions in order to stimulate discussions. The questions were structured around participants' experience of social relationships in the study area (with whom they interact; why they interact, and how they interact) and their experience of the physical environment.

Interviews were conducted until data saturation occurred. Data saturation does not rely on statistical power (Bickman & Rog, 2009: 22), but rather strives to utilise multiple methods of research (in this case, observations and interviews) in order to establish trustworthiness. As an increase in sample size (in some instances) may lead to a diminishing in added value to the research (Robson, 2001: 148), the general aim of the interviews was rather to gain an in-depth understanding of

social systems than generate findings that are representative of other study areas.

6.4 Data analysis

6.4.1 Observations

The following steps suggested by Sarantakos (2013: 237) and Miles *et al*. (2014: 37) were used in the data-analysis process: grouping together field notes and photographs according to themes and patterns; reflecting on data (in terms of research questions and aims of the study), and capturing behavioural patterns and categories. The themes or categories were chosen based on the settings observed most (Roland, Jansen, Wiertz, Meyer & Noldus, 2003: 391).

6.4.2 Interviews

Textual data (transcribed *verbatim*) were analysed by means of thematic content analysis (Leedy & Ormrod, 2014: 150; Silverman, 2011: 267). Open coding was used to allow themes to emerge spontaneously from the data; thereafter, data were categorised into themes and subthemes relevant to the research topic. The following steps guided the content analysis: selecting appropriate constructs; selecting appropriate text (unit of analysis); defining and developing categories; coding of concepts; reflecting on coding/categories in terms of theory/ research questions, and developing themes and subthemes (Denscombe, 2010: 281-282; Gray, 2014: 607- 609). An interim data analysis was conducted to determine whether rich descriptive data had been obtained regarding the phenomenon being explored and to determine whether data saturation had been achieved (Bates, Droste, Cuba & Swingle, 2008: 14).

6.5 Trustworthiness

Truth value is viewed as the most important criterion for the assessment of qualitative research (David & Sutton, 2011: 114). Sandelowski (1986) and Gray (2014: 175) suggest that a qualitative study is credible when it presents such accurate descriptions or interpretation of human experience that people who also share that experience would immediately recognise the descriptions. Two strategies were employed to ensure trustworthiness of the data, namely triangulation (Bryman, 2012: 717; Creswell, 2014: 201) and member checking (Gray, 2014: 85; O'Leary, 2014: 132). Triangulation is commonly used in ethnographic research to compare and contrast sets of data in order to enhance the trustworthiness of the data (Gray, 2014: 186). In this instance, the observations and interviews were used to compare and contrast data in order to clarify how social systems interact with one another and with their environment. Member checking (Creswell, 2007: 39) by means of feedback from participants was used to ensure that the interpretation of the findings was correct.

6.6 Ethical aspects

Qualitative research is particularly concerned with ethical issues, due to the complexity of researching private lives and placing accounts in the public arena (Birch, Jessop, Miller & Mauthner, 2002: 1). Brinkmann & Kvale (2008: 266-269) as well as Goodwin & Goodwin (2014: 41- 46) outlined informed consent, confidentiality, consequences of the research, and the bias of the researcher as ethical issues. These issues must be addressed in qualitative research and were used as guidance to conduct this research. Participants signed informed consent forms that invited them to take part in the research on a voluntary basis without remuneration. It provided information about the overall aim of the research and how it would be conducted; highlighted possible consequences of the research, and ensured confidentiality of the participants.

7. FINDINGS AND INTERPRETATION

7.1 Observations

The main observations revolve around the following themes: conflict points; visible social systems; social system interaction, and behaviour patterns.

7.1.1 Main observation 1: Points of interaction

Social interaction is not equally distributed throughout the study area, but concentrated in eight primary zones of interaction. These conflict points (Maree, 2007: 101) are areas where intense pedestrian movement,

Figure 2: Conflict points for social interaction

Source: Authors

a concentration of various activities, and vigorous social interaction can be observed.

7.1.2 Main observation 2: Visible social systems

Three clusters identified as social systems were visible in the study area. The *first cluster* (Social System One) is prominent during fixed time sets. This formal social system consists of structured groups that seem to have a vested interest in the area and include businesses (formal and informal); employees, and those who deliver some kind of service (people who deliver goods, those who supply transport, *e.g.*, taxi drivers, and other servicemen such as cleaners and security/safety officials, *e.g.*, policemen and traffic officials).

The *second cluster* (Social System Two) is observed as an informal social system that consists of unstructured groups of people who seem to be familiar with one another and the physical environment. Although the size of groups in this social system varies in terms of the number of people, groups remain small (three to six people). This social system is more difficult to observe than the formal social system, because it is not routine based and does not always consist of the same people, although groups frequently visit the study area (daily/weekly).

A *third cluster* (Social System Three) forms a group of unrelated individuals who barely interact with one another socially, and very little interaction takes place with other social systems. These individuals (or small groups of people) are not recognised by others; do not readily make eye contact; move fast, and take the shortest route to a particular destination.

7.1.3 Main observation 3: Interaction between social systems

The social interaction observed between the three clusters (Formal Social System, Informal Social System, and Unrelated Social System) culminates in an intricate network of non-linear flows of interaction (see Figure 3). The network of social systems together forms a complex urban social system. Interaction

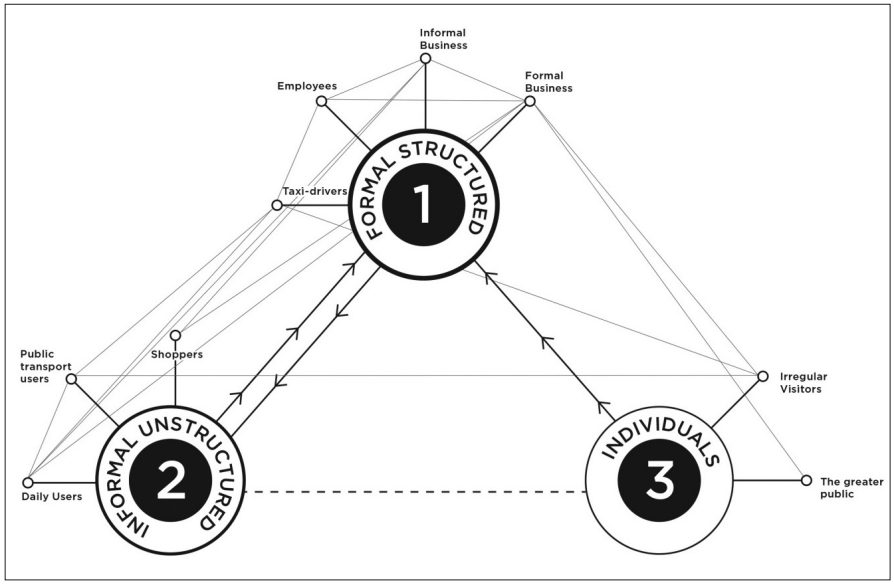

Figure 3: Interaction within and between social systems
Source: Authors

emerged as internal and external interaction. Internal social interaction occurs on two levels, namely social interaction *within* a social system (meaning between groups in the same cluster/social system) and social interaction *between* the social systems. External interaction is observed as interaction between the social systems and the physical (spatial and built) environment.

i. Internal social interaction *within* social systems

Within the Formal Social System, groups socially interact in a persistent manner that can be described as formal, structured, forced and predictable (based on a routine). Social interaction takes place between employers and employees; employees and employees; employers and employers; servicemen and employers; servicemen and employees, and servicemen.

Interaction between groups within the Informal Social System is observed as intense, non-routine based, voluntary and friendly social interaction. These groups are observed as groups that have no vested interest in the area, but interact for the sake of social interaction. Individuals and small groups of participants within this system stay visible in the same area for various timeframes. The informal friendly nature of interaction contributes to a vibrant urban space.

Interaction within the Unrelated Social System is nearly absent, except for the occasional greeting and short conversations. Individuals enter, move and leave the area without recognising others.

ii. Internal social interaction *between* social systems

Social interaction between the Formal, Structured System (System 1) and the Informal, Unstructured System (System 2) is observed as continuous and persistent. It culminates in a high (intense) level of interaction. The nature of the relationship is informal, social, and reflects familiarity as greeting; informal conversations take place without necessarily exchanging goods/services.

Social interaction between the Formal, Structured Social System (System 1) and the Unrelated Social System (System 3) is much more formal than the aforementioned. The relationship observed can be described as symbiotic and harmonious, as these two systems are co-dependent (*e.g.*, businesses offer goods in exchange for money). Interaction takes place for short periods, in which members of system 3 (public) leave directly

after, for example, a transaction was completed/service was delivered.

Social interaction between the Informal, Unstructured Social System (System 2) and the Unrelated System (System 3) is less evident, nearly absent, as these two systems do not seem to have anything in common. A typical example of this low level of interaction is, for instance, where an individual of the Unrelated Social System enters the area with private transport, buys goods and exits the area, without any other level of interaction.

iii. External interaction between social systems and the spatial/built environment

While an extensive description of how people interact with their spatial/built environment (physical space) falls outside the scope of this paper, a brief description of the physical space and how social systems interact with the study area is appropriate, as the physical environment is important in people-place relationships (Relph, 1976; Hay, 1998; Smaldone, Harris & Sanyal, 2005).

The spatial environment of the study area is characterised by mixed land uses (with a dominating formal and informal business sector) and various modes of transport, including private transport, bicycles, motorcycles, public transport (taxis) and pedestrians. At the time of the observations, the built environment showed signs of urban decay (see Figure 4), such as a lack of maintenance (presence of litter and broken sidewalks), vandalism (broken windows and graffiti), and a visible consciousness of crime (illustrated by target-hardening security measures, such as fencing on building roofs, bars in front of windows, Closed Circuit Television Cameras, and alarm systems). The physical space has almost no greenery (trees and shrubs).

Figure 4: Examples of urban decay

Source: Images taken by authors

Specific patterns of interaction between social systems and the physical environment are relevant in terms of the role of urban systems and urban regeneration, and include the following: interaction with the physical environment by the different social systems present in the study area illustrates *adaptive use* by erecting canopies/umbrellas for shade and arranging crates/boxes in a semi-circle in order to create seating space in public spaces; *personalisation* by hanging colourful flags in front of shops, bringing personal objects (*e.g.*, potplants/ baskets) to be put on display tables (informal sector) and outside shops (formal sector); *territoriality/ownership* by picking up litter in the area and loud arguing with people who vandalise the area, and *functional use* by taking part in the activities and using the utilities the space offers, *e.g.*, buying/selling, washing cars/ taxis, and using temporary seating spaces to relax and socialise.

7.1.4 Main observation 4: Behaviour patterns

Eight interactive collective behaviour patterns emerged from grouping the themes observed in the study area (at conflict points), summarised in Table 1.

All the behaviour patterns observed (except for the antisocial pattern) reflect pro-social behaviour (behaviour that promotes good social relations and stimulates further social behaviour – see Figure 5) that is characteristic of the presence of cultural relativism (Rachels, 1999: 6) and social awareness (Rosado, 1994: 2). The openness to accept different people (and different social systems) found in cultural relativism, illustrates the inclusive nature of participants in the study area, which, in return, creates a highly accessible social space. Social awareness or consciousness, which refers to the awareness of the people in the area, the people around them and their hardships or joy (Brinkmann & Kvale, 2008: 113) is illustrated by the strong consciousness of the social atmosphere in the study area.

Figure 5: Examples of social interaction (pro-social behaviour)

Source: Images taken by authors

The particular research context can be defined as a socially sensitive context, in which the three social systems observed closely interact with one another, as well as with the physical space (spatial/built environment). Any intervention that implies physical change in this area without acknowledging the interactions observed may impact on how these intricate networks operate.

The observations served as a platform to explore the social systems identified from within in order to understand and interpret their role in relation to urban regeneration.

7.2 Interviews

The following themes and subthemes emerged from the interview data.

Table 1: Behaviour patterns

Behaviour pattern (codes)	Behaviour	Supportive example
Pride	Acting with confidence	Owners of informal stalls show off stalls/goods to sell to other business owners as well as to people they seem to know and who are not necessarily interested in buying goods.
Intellectual stimulation	Actively and vigorously taking part in conversations/activities	Groups of people having loud, intense conversations, attracting more people after a while to join in the discussion.
Territoriality	Arguing and brawling	Owners/workers at informal stalls argue with others who try to occupy the space/part of the space they normally use.
Harmony	Friendly cooperation with people	People sitting together in circles socialising, eating together and sharing food.
Ownership	Acting responsibly	Owners/employers from informal businesses would constantly clean up around them, throwing litter into the dustbins and commenting on people littering.
Social drive	Informal voluntary social interaction	People greeting other people by name and taking interest in other's well-being; people sitting in circles and socialising without any other purpose than socialising.
Joy	Laughing, singing and dancing	People in the area who spontaneously start to dance e.g., music playing in taxis.
Antisocial	Reserved behaviour – without socialising	Only one social system could be observed behaving in this way. People walking at a fast pace without distraction, e.g., making eye contact or greeting other people.

Source: Authors

Main theme 1: Social system interaction

Strong social interaction that emerges continuously and spontaneously in the study area manifests as a prominent and central theme. Interaction is experienced as positive social interaction, as supported by the following subthemes.

Subtheme 1: Material supportiveness

Participants from the various social systems experience their relationship as 'helping' and 'supporting' with regard to material needs. One participant described this as follows: "This one time I fell short of a few Rand for my taxi fare, and this one lady offered to give the fare that I needed." This was confirmed by another participant who said: "I sometimes need some tape to strengthen my stall's roof and everyone is very keen on giving me some, in fact I have this one friend that gives me tape on a daily basis." This material support is perceived to have reciprocal benefits in future, as stated by a participant who said: "I like helping the other people in the rank (with a smile), because someday I am going to need some help."

Subtheme 2: Friendliness

It seems that social systems interact with one another in a friendly manner in this area and conflict is limited. This was confirmed by a participant who stated: "All the people are very friendly in the area; there is almost never any conflict in the area ...", while another participant supported this by saying: "We sometimes greet each other from a distance, we like yelling (smiling) for each other ..." Another participant exclaimed very fittingly: "If you're not friendly here, you are not welcome here."

Subtheme 3: Cooperativeness

Cooperativeness is expressed by the non-competitiveness that exists between participants involved in commercial activities. Non-competitiveness is defined as the inclusion of other social systems without the threat of self-losing or destruction (Bates *et al*., 2008: 2). In this study area, the social systems perceive one another as uncompetitive and this is conducive to sustaining the economic advantages of the area in future. A participant gave the following account of the uncompetitive attitude that reigns: "When I can't help some people with fruits and vegetables, I always show them to my friend's stall or even shop." This attitude enhances economic relationships, as one participant stated: "I always show people to other stalls because another time someone will show them here..."

Subtheme 4: Sociability

Sociability is present due to the open and easy communication that takes place among the social systems. One participant gave a description of this communication with the following remark: "We sometimes sit and talk at our stalls and most of the time we lose track of time ..." Another participant stated: "Once you start speaking to the people in the rank, you will find them very interesting." One participant explained: "We scream at each other because it means that we feel secure and comfortable in the area and talking is the way to show it."

Subtheme 5: Non-discriminating

It seems that the different social systems, apart from being very accommodating with one another, are also open to accepting newcomers in the area. People of different backgrounds are welcomed and accommodated in a non-judgemental way. One participant emphasises this by saying: "I am so happy to see different cultures coming to this area", while another supports this by stating: "We are people from different backgrounds that come together here and communicate, and every person's reason for coming here is different, but it makes no difference to us." This shows a high level of awareness of different social systems, and emphasises participants' strong awareness of social interaction in the area. One participant stated: "I am very happy and aware that the people here talk to each other and we are usually very aware of newcomers in the area."

Subtheme 6: Emotional security and stability

The daily routines, in which participants engage, and which consist of predictable actions, activities and movement patterns, seem to give a strong sense of security and stability to participants in the area, and they developed over time. These relationships and interactions are fixed and established. One participant stated: "We always do the same things here", and later he explained this by adding "we like it because we always know what to get and where to go". Another participant said: "... even the pattern that we walk in the area is the same on a daily basis, we like it because everything is as we like it." This creates the idea that the area could be sensitive and volatile for interventions that impose change without acknowledging these routines that underlie the participants' feeling of security and stability.

Subtheme 7: Respect for others

A general respect towards each other underpins the interaction between the different social systems. A participant emphasised this by saying: "We like each other, there is a great spirit of respect towards us and this gives us the feeling to respect others." Another participant stated: "I usually think everyone is okay, I have respect for everyone ..." The theme of respect was prominent throughout the interviews and a fundamental characteristic of how participants interact.

A general feeling of emotional, material and social support seems to exist among the social systems present in this area. This is reflected by the friendly, cooperative and accommodating nature of the relationships that foster respect and create a comfortable, at-ease feeling towards one another. Open communication flourishes in these relationships. At the same time, these and especially the known established daily routines help secure this community in how they perceive and interact with one another.

The *inside view* on social interaction gained from the interviews with seventy-five participants supports the observations of pro-social behaviour that manifests in cultural relativism and a high level of social awareness.

Central theme 2: Participant's interaction with the physical environment

A second central theme that was identified and supported by the observations is the strong interaction of participants with the physical environment. Specific subthemes were identified from the content analysis in order to understand the role of urban social systems with regard to the physical environment.

Subtheme 1: Flexibility and adaptivity

Flexibility to adapt to the physical space develops as a direct consequence of the dissatisfaction with the support that the physical environment provides for the activities in the area, for example for the activities of the informal traders. Participants learned to adapt the physical environment to their personal or communal needs. One participant stated that: "... this area is not very nice to do business, so we usually put our own stalls as we like it." Another participant stated: "I like the area, but I adapt the stalls as I like it, because the area is not very nice ...", because (as s/he explains later) "... there are no facilities for the needs I have, in particular roofs for our stalls, so I bring my own plastic to cover my stall". This also applies to the communal needs. One participant stated: "We like eating in the food yards we built for the people." This confirmed this subtheme, as the majority of the participants expressed comfort with adapting the area for their own or communal needs.

Subtheme 2: Ownership

Participants displayed a feeling of ownership of the physical environment. Ownership can be defined as subjective possession taken by someone who does not have the legal right (Bates *et al*., 2008: 2). Participants stated the following: "... this is our place; we usually do as we wish". Another person stated: "I visit the area so much, that I sometimes feel like it's my home". This enhances the idea that some participants link certain subjective feelings with the area, making the physical area part of their lives. Another participant reacted as follows: "... the area is known and familiar, why do we want to change it?" Ownership is widely experienced. One participant declared: "I sometimes come in earlier to clean around my stall". I asked the participant to elaborate and s/he stated: "I do not want to make food in a dirty place and I like that other people like coming here."

Subtheme 3: Pride

Pride is a positive phenomenon in this context, because the participants take joy in being proud. This was expressed by participants who were keen to speak about the area and offered to show the researcher and translator around the area. During one interview, the participant exclaimed: "I am very proud of the area, because this area is the income for most of the people here ..." Pride seems to extend beyond the physical space to represent the actual livelihood for some of the people who interact here. One participant supported this by introducing the community in the area by saying: "... the people here are proud of the area..."

Subtheme 4: Limited choices

The interaction with the study area is mostly viewed as mandatory. The participants interact with the area, because alternatives are limited due to transportation constraints and because vendors find customers there. This is supported by participants stating the following: ".. .there is no other taxi rank coming from Ikageng in Potchefstroom" and "I always have to come here because it's where I do my shopping ...", or "I get the most customers for my shop here in this area ..." and "This is the only rank where the taxi association supports us picking up passengers." When listening to these answers, one comes to understand that the participants do not really have a choice but to use this area.

Subtheme 5: Relaxation

The participants experience the area as one that supports relaxation and social activities. One participant stated: "I like making fire in this area to 'braai' with friends ..." Another two participants stated: "... we usually like going to the food stalls and eating vetkoeks with friends" and "... after work I come here to relax and forget about the worries of the world ..." These answers clearly reveal that the urban environment is seen as conducive to social interaction.

Subtheme 6: Dissatisfaction with the physical environment

Dissatisfaction with the physical space is expressed with regard to maintenance, lack of urban greenery and safety issues.

With regard to maintenance, a participant stated: "I never use the toilets as it is always broken." Another participant said: "... the area around the toilets always smells, because the sewage flows through the rank." This shows that the lack of proper infrastructure causes problems with health in the area.

Dissatisfaction was noted about the lack of physical infrastructure elements (shade, play spaces for children). One participant stated: "I always have to bring my umbrella for shade ..." The need for trees or sheds was emphasised with another participant stating: "There are no trees, because they use it for fire, but we need trees ..." Mothers quickly stated that there are no play spaces for children. One participant stated: "I do not like the area because there is no safe way for my children to play in the rank." The dissatisfaction confirms the need for urban interventions such as urban regeneration.

Another theme identified was the issue of safety and the dissatisfaction with the way in which the physical area fails to support the safety of the community. This concern was emphasised by means of three issues that were raised: safety for children, traffic, and crime.

(1) Female participants raised the issue of unsafe spaces for children. One participant reacted passionately by saying: "... my child fell the other day over a pipe that stuck out of the ground, and he broke his arm." Another participant stated the problem as follows: "I am always afraid of letting my children off the taxi alone ..."

(2) A participant raised the community's feeling of unsafety due to the absence of traffic regulation in the area: "We never know where to walk and where to sit, the taxis drive like animals ..." This creates an unsafe area, as pedestrians are exposed to traffic on a continuous basis. Another participant stated: "... the taxis do not look where they drive, I am afraid to walk over the road." This makes it clear that the community feels very unsafe in terms of the physical environment, due to the lack of infrastructure for pedestrians.

(3) Crime in the area is a problem, especially since the physical environment does not enhance optimal safety. One participant stated: "... I never even walk alone here, because they will rob you ..." Another participant stated: "I always have to put my handbag in a black garbage bag to hide it ..." This confirms social problems such as crime. Probing was done, because CCTV cameras were spotted during the observation stage, and the reaction was as follows: "... they put cameras in this rank, but it does not work anymore because the municipality does not fix it."

The interaction with the physical environment seems to be much less supportive than that of the social environment. This is reflected in the forced way in which participants have to adapt physical spaces and facilities to accommodate their needs and daily activities, and the fact that little choice is provided in terms of alternative spaces to conduct daily activities, for example socialising and eating. Positive interactions such as pride, ownership and relaxation seem to follow more from the fact that participants make the best of what they have available and from the strong social dynamics than a positive relation with the physical environment. This is emphasised by the general dissatisfaction with the physical environment in this context.

8. DISCUSSION: THE ROLE OF SOCIAL SYSTEMS IN URBAN REGENERATION

The exploration of the social systems in the Central Business District of Potchefstroom revealed that social systems play an active and prominent role in the study area. This role is a *pro-active role* in terms of initiating social interaction and fostering existing social relationships; a *creative role* in terms of adaptation and/or changing the physical environment, and a *supportive role* in terms of urban regeneration initiatives.

The first role (pro-active role) is realised by creating a social environment that is accessible and stable; generates vitality, and strengthens social identity. Social accessibility is created by attracting social interaction within and between various social groups (social systems) on a continuous basis through pro-social behaviour patterns. Social accessibility is further enhanced by means of the apparent cultural relativism in which people (participants) interact with other people/systems in an open, non-discriminating and cooperative manner. Social stability is created by means of the constant and persistent presence of social systems in the study area, which implies maintaining the social systems over time. Vitality (a healthy capacity for vigorous activity) is generated by unlocking positive social energy through pride, intellectual stimulation, harmonious relationships (by means of friendliness, cooperativeness and support), internal social drive (high sociability) and joy. Lastly, the role of social systems towards strengthening social identity is realised through territoriality and ownership in the study area. Territoriality and ownership have the potential to create a sense of belonging among people who share the same space, which, in return supports social identity.

The second role (creative role) is realised through aesthetic and functional adaptation and/or change of the physical space. Aesthetic adaptation is used to personalise the spatial/built environment according to personal taste/preferences.

Functional adaptation is applied by creating facilities where these are lacking (*e.g.*, temporary canopies for shade, crates/boxes for public seating). New public spaces and facilities are self-created/constructed, for example, outside restaurant areas (food yards and braai areas) where such facilities are needed, but there is no space to accommodate these. Adaptation, self-creation and change in terms of the physical space (spatial and built environment) enable the social systems present to find creative solutions for needs that exist in the study area.

The third role of social systems (supportive) suggests that social systems are important role players in urban regeneration. In terms of their supportive role, social systems act as catalysts for socio-economic functions; have the capacity to help formulate and implement urban regeneration initiatives as they understand the context for which the urban regeneration proposals are intended, and act as custodians of the space by maintaining the area. With regard to being catalysts for socio-economic activities, social systems attract and maintain social interaction, which creates vibrant public urban spaces. Vitality is a much-needed ingredient for sustaining economic activities and it creates safe public spaces. Secondly, the prolonged involvement of social systems in the study creates familiarity with the intricacies of how social dynamics in the area operate. This local knowledge is a resource used to support the formulation and implementation of urban regeneration initiatives as social systems understand the needs, desires and aspirations of people on the ground. In this sense, social systems have a greater capacity to anticipate whether urban regeneration initiatives will be successful or not. If social systems are integrated into the urban regeneration process, they form custodians of the physical environment (as illustrated by ownership, pride and territoriality that already exist in the area) and, therefore, ideal co-partners in maintaining the area.

The multiple roles of social systems (especially the formal structured system and the informal unstructured system) in the study area suggest that these systems are important in sustaining the area socially, as well as economically and physically. Urban planners who wish to facilitate successful change in the urban environment, by means of urban regeneration, should take cognisance of urban social systems and the social dynamics that drive them.

9. INTEGRATING URBAN SOCIAL SYSTEMS IN URBAN REGENERATION INITIATIVES: RECOMMENDATIONS

The study first and foremost recommends that urban regeneration initiatives should be based on an understanding of the dynamics (social interaction and behaviour) of the social systems present in the context marked for urban regeneration. Social systems should be pro-actively integrated in the urban regeneration process. A three stage strategy for integrating social systems in urban regeneration is suggested in Table 2.

10. CONCLUSION

An exploration of urban social systems in the Potchefstroom Central Business District resulted in the identification of three urban social systems that form a complex, non-linear network of internal social interaction (within and between social systems), as well as external interaction with the physical space. Social interaction reveals pro-social behaviour that fosters and sustains existing social relationships while attracting social interaction. The pro-social behaviour manifests in a high level of social awareness

Table 2: Three-stage integration of urban social systems in urban regeneration

Project stage	Aim	Steps toward achieving aim
Stage 1: Pre-project stage (prior to plan formulation)	Understanding social dynamics in a particular setting in terms of social interaction and behaviour.	Identify social systems in a particular setting.
		Identify behavioural patterns in terms of pro- or anti-social behaviour.
		Identify levels and intensity of interaction in terms of cultural relativism or ethnocentrism.
		Determine the role(s) of social systems for use as resources in urban regeneration.
Stage 2: Plan formulation Implementation	Involving social systems in a pro-active and continuous manner.	Develop focus groups/community groups to discuss interventions on a regular basis
		Involve social system members/groups for physical design/construction during implementation.
		Use special community projects as part of the implementation to develop ownership and territoriality.
Stage 3: Post-project stage (after implementation)	Providing feedback and monitoring the sustainability of the urban regeneration process.	Develop a feedback system to evaluate the process followed.
		Establish an urban regeneration community forum (URCF) to monitor the success/ experience of the urban regeneration process.
		Establish a maintenance forum (part of the aforementioned URCF).

Source: Authors

and cultural relativism that forms the underlying driving forces of the social dynamics in the study area. The social environment in the study is supportive of positive social relationships and behaviour and, therefore, conducive to the sustainability of urban regeneration initiatives. However, the physical environment (spatial and built environment) is, in general, less supportive and seems to need intervention.

Social systems seem to play an active and multileveled role that can possibly inform urban regeneration in terms of its proactive role in fostering positive relationships; creative role in adapting and changing the physical environment to address needs not catered for, and its supportive role to implement urban regeneration initiatives by unlocking internal resources such as local knowledge, creativity, commitment, energy and ownership, which are key ingredients for the success of urban regeneration.

Including social urban systems in the process of urban regeneration seems to be beneficial for the process of implementing change in the urban environment. A social mindset, as suggested in this research, may assist planners in how to facilitate intervention and change through urban regeneration in order to create cities of hope.

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