



**SHLC**  
Centre for Sustainable,  
Healthy and Learning Cities  
and Neighbourhoods

# A Review of Urban Neighbourhood Scholarship



**Type**

Research Report

**Author**

Dr Gideon Baffoe

**Date**

May 2020

This report is published by the GCRF Centre for Sustainable, Healthy and Learning Cities and Neighbourhoods (SHLC). The contents and opinions expressed in this paper are those of the authors only.

Cover photo: Dusk approaches at Rupsa Bridge, Khulna, Bangladesh. Credit: Ifan.Shakil and Tanjil Sowgat, Khulna University

#### Permission to share



This document is published under a creative commons licence:

Attribution-NonCommercial-NoDerivs 2.0 UK <http://creativecommons.org/licenses/by-nc-nd/2.0/uk/>

SHLC is funded via UK Research and Innovation as part of the Global Challenges Research Fund.



SHLC is an international consortium of nine research partners, as follows: University of Glasgow, Human Sciences Research Council, Khulna University, Nankai University, National Institute of Urban Affairs, University of the Philippines Diliman, University of Rwanda and the University of Witwatersrand.



# Table of Contents

|  |            |
|--|------------|
| <b>List of Tables</b> .....  | <b>ii</b>  |
| <b>List of Figures</b> .....   | <b>ii</b>  |
| <b>Executive Summary</b> .....   | <b>iii</b> |
| <br>   |            |
| <b>1 Introduction</b> .....  | <b>1</b>   |
| <b>2 Method</b> .....  | <b>2</b>   |
| <b>3 Neighbourhood scholarship</b> .....                                   | <b>3</b>   |
| 3.1 Neighbourhood constructs.....  | <b>3</b>   |
| 3.2 Dimensions and boundaries of neighbourhood .....                       | <b>5</b>   |
| 3.2.1 Neighbourhood as a place.....  | <b>5</b>   |
| 3.2.2 Neighbourhood as a community.....                                    | <b>5</b>   |
| 3.2.3 Neighbourhood as a unit of policy formulation.....                   | <b>6</b>   |
| 3.3 Emergence of neighbourhood as a research unit .....                    | <b>6</b>   |
| 3.4 Neighbourhood change .....   | <b>7</b>   |
| 3.5 Neighbourhood effects .....  | <b>9</b>   |
| 3.6 Importance of neighbourhood as a research unit.....                    | <b>10</b>  |
| 3.7 Approaches to studying neighbourhood.....                              | <b>12</b>  |
| 3.8 Challenges of neighbourhood research.....                              | <b>13</b>  |
| 3.9 Neighbourhood conditions, health and education.....                    | <b>14</b>  |
| <b>4 Neighbourhood studies in developed and developing countries</b> ..... | <b>16</b>  |
| 4.1 Scholarship focus.....   | <b>19</b>  |
| <b>5 Conclusion</b> .....  | <b>21</b>  |
| <b>6 References</b> .....  | <b>23</b>  |
| <b>7 Appendix</b> .....  | <b>42</b>  |

## List of Tables

|  |    |
|--|----|
| Table 1: Summary of neighbourhood studies in developing countries..... | 42 |
| Table 2: Summary of neighbourhood studies in developing countries..... | 51 |

## List of Figures

|  |    |
|--|----|
| Figure 1: Total number of publications.....                                  | 17 |
| Figure 2: Methodological approach of neighbourhood literature .....          | 18 |
| Figure 3: Distribution of neighbourhood literature.....                      | 18 |
| Figure 4: Clusters of neighbourhood literature in developing countries ..... | 20 |

# Executive Summary

Over recent decades, neighbourhood has emerged strongly both as an academic concept and research unit in various disciplines, including urban studies, sociology, planning and human geography. This is attributed to its inherent unique characteristics and embodiment as a microcosm of urban socio-ecological landscape, where creation and dissolution of social spaces occur. Although some scholars remain sceptical about its relevance due to its contested and porous nature, evidence across the globe shows that social processes, such as immigration, lifestyle, crime, unemployment and housing quality are best studied and understood at the neighbourhood level. As such, neighbourhoods are favoured for social policies because of their ability in allowing for tailored solutions in tackling pressing societal problems. They play an important role in social identity, in addition to offering a unique opportunity to understand behavioural characteristics of people. The concept also has special appeal as a spatial unit for understanding complex and salient urban challenges.

This report reviews how the concept has been constructed and how it emerged as a research unit. Further, it considers the issues of neighbourhood effects and change, approaches to the study of neighbourhoods as well as the importance and challenges of neighbourhood research. Additionally, it highlights how the concept has been applied, particularly, in developing countries. The report is based on a review of relevant literature, including journal articles, books, chapters, and scientific reports.

The review reveals that the concept is hotly contested and negotiated, hence it defies singular definition. Definitions largely follow two dimensions; subjective and administrative or geographically boundaries, with elements, such as people, social relations, space and activities culminating in creating the spatial unit. The focus of scholarship, in general, is skewed, particularly towards neighbourhood effects and neighbourhood change. In the global south, especially in Africa and Asia, the focus is somewhat different; satisfaction and wellbeing, redevelopment, health and social capital are dominant. In terms of regional contributions, writers based in the United States and the United Kingdom have been at the forefront in pioneering critical debates and discourses at both global and national levels.

Neighbourhood scholarship has also witnessed significant advances in methodological approaches, with most studies employing quantitative methods, such as various regression and land-use models, path analysis, amongst others. Qualitative methods, including case studies, interviews and observations have also been applied by many studies. The challenge, however, has been application of mixed methods. Only a few such studies have attempted, suggesting room for improvement, and the need for future research to think creatively about how to effectively blend the two in gathering and analysing neighbourhood level data. In addition, the construction of agreed neighbourhood definitions and access to quality neighbourhood data continue to be major challenges.

A major concern that the review identified is that less attention that has been given to many critical areas, such as neighbourhood education, health, livelihood, adaptation, security, and built environment. These areas are under-studied at the neighbourhood level, especially in developing countries. The review recommends more empirical examination of these issues, as they hold great promise in furthering the contextual understanding of sustainable, healthy and learning neighbourhoods, in addition to shaping various urban residential policies. Understanding these areas, it is argued, would be critical in contextualizing neighbourhood sustainability.

The review identifies core areas where future research is likely to make significant contribution, including empirical data generation at the neighbourhood level to analyse the interlinkages between neighbourhood conditions, health and education. This is important because existing studies mostly rely on secondary data. Given the overdependence on statistical modelling and inferences, which misses out on great deal of contextual neighbourhood peculiarities, employing hybrid methods in data generation and analysis to understand fundamental and critical neighbourhood issues holds great promise in making another significant contribution. Further, attempt by the project to operationalize neighbourhood resiliency or sustainability would be a major seminal work in the domain of neighbourhood scholarship. This is especially true, as no attempt has been made yet.

# 1 Introduction

It is commonly believed that neighbourhoods are places of living experiences. Neighbourhoods continue to attract scholarly attention from different disciplines, including but not limited to urban planning, community development, geography and sociology. The attractiveness of the concept could be attributed to its inherent unique characteristics and embodiment as a microcosm of urban socio-ecological landscape. Neighbourhoods as a spatial unit also has an appeal as a strategic unit to understand urban metabolism.

In spite of its currency, however, attempts to precisely define the concept have proved elusive over the past decades. This is because it is influenced by type, lifestyle and critical contextual factors (Muller 1981; Fischer 1984; Parkes et al., 2002) that are not always easily understood. Consequently, it continues to be fluid and contested. Scholars have constructed neighbourhoods from different perspectives ranging from social, political and economic functions to stages of urban growth (Hunter 1979; Galster 1986). In the neoliberal era, for instance, governments across the globe seek solutions to various pressing societal problems by delegating responsibilities to micro level organizations (Raco 2000; McCann 2001; Meegan and Mitchell 2001; Elwood and Leitner 2003), giving political and social meaning to neighbourhoods in the process. According to Martin (2003), the practice of neighbourhood should be the utmost priority of scholars. Thus, the fact that neighbourhood lacks core definitional attributes makes it suitable to function as a scholarly and social unit, especially when “recognized as the flexible, contingent, social and political products that they are” (Martin 2003, p 7). It is believed that understanding the scales, features and dynamics of neighbourhoods is critical for effective targeting and policy actions (The Young Foundation 2010).

This report is not intended to delve into the definitional debates nor question them, but rather highlight the various definitions that have been proposed. Thus, the report aims to review how neighbourhood has been constructed and how it has emerged as a research unit. It also considers the issues of neighbourhood effects and neighbourhood change, research approaches as well as the importance and challenges that researchers face in conducting studies at this level of space. More so, it highlights how the concept has been applied in the context of developed and developing countries. The ultimate goal is to identify research gaps, which can provide bases for future neighbourhood research, particularly in developing countries. Section three looks at neighbourhood scholarship, followed by neighbourhood studies in the developed and developing worlds. Section five concludes the study.

## 2 Method

This report is based on review of relevant literature, including journal articles, books, chapters and scientific reports. The diversity of sources was to allow for variation in the presented evidences. To avoid omitting outdated, but relevant literature, the review did not employ any particular time span. Almost 90 per cent of the retrieved papers were journal articles from various sources, including but not limited to those published in *Urban Studies*, *American Sociological Review*, *Cities* and *Habitat International*. Major academic databases used were the Web of Science (WoS), Scopus and Google Scholar. In addition to the critical review, content and cluster analysis were employed to understand emerging literature themes. This latter analysis was applied to literature or studies conducted in both developed and developing countries. The motive was to understand how neighbourhood has been applied in the Global North and South, especially in Africa and Asia.



## 3 Neighbourhood scholarship

### 3.1 Neighbourhood constructs

The definitional struggle with the concept neighbourhood is well documented (Wirth 1938; Suttles 1972; Hunter 1979; Muller 1981; Olson 1982; Fischer 1982; Galster 1986; 2001; Kearns and Parkinson 2001; Parkes et al. 2002). The porosity and fluidity of neighbourhood boundaries, in addition to emerging social changes, make precise definition a herculean task (Anderson 2017). Chaskin (1997) asserts that although neighbourhoods are viable units of action, the operational definitions of these units are multiple. Aber and Nieto (2000, p.188) point out that, despite many years of definitional struggles, the question of what precisely constitutes a neighbourhood remains elusive. Similarly, Bjarnesen (2015) notes that the varied connotations of neighbourhood in everyday life make analytical application of the concept challenging. The latter is especially true as different types of neighbourhoods are known to be distinctive by the relevance and style of appearance at different levels (Schnell et al. 2005). The seemingly divergent views on neighbourhood have culminated into reductionist applications, and this could be attributed to the misleading notion that everyone knows what neighbourhood is all about (The Young Foundation 2018). Galster (2001, p. 2111), for instance, is of the view that although neighbourhood is hard to define, “everyone knows it when they see it”. Thus, researchers often talk of neighbourhood as though there is a consensus with readers as to its constituents (Getis 2015). This has caused some scholars to point out the difficulty that this creates when it comes to appropriate social policy formulation (Chaskin 1997). Creating neighbourhood as a unit of planning and action, according to Chaskin, holds great potential in offering better understanding of its morphology.

The quest to understand what constitutes a neighbourhood has attracted wide scholarly interest. While some scholars define neighbourhoods from the perspectives of people’s perception (e.g. Galster 1986; Ellaway et al., 2001), others do so based on the existing opportunities of a place (e.g. Wilson 1987; Buck 2001). Brower (1996) conceptualises neighbourhoods as a socio-territorial unit, encompassing four dimensions; place-based, (involving physical, topology, morphological, and architectural aspects of a neighbourhood); local human activities (including mobility and social organizations) and unique cultural characteristics and personalities. Drawing on traditional conceptualizations, and re-echoing Brower’s (1996) encapsulation, Schnell and Goldhaber (2002) classified neighbourhoods by emphasizing territorialisation, rootedness, day-by-day services, social interactions, control and identity as well as place attachment.

Neighbourhoods are localised networks of everyday social interactions that invoke a sense of identity among residents. Thus, they are social constructs that are often disputed and negotiated by residents and key stakeholders (Anderson 2017). For Anderson, neighbourhoods are formed through community organizations, which represents members and residents’ interests and are usually perceived as shared among residents and businesses, situated within identified spatial boundaries. Anderson add that “more than just local networks of social relations, neighbourhoods often become “politicalized” sites to the extent that members actively come together to mobilize resources in the name of preserving, enhancing, or changing particular neighbourhood characteristics”. Local institutions (e.g., churches, schools, community centres), he notes, are the core venues of various social activities “that work to organize everyday life and consolidate a sense of social cohesion, control, and identity” (Anderson 2017, p. 8). In the beginning of modern society,

neighbourhoods were classified on the basis of physical interdependences, the need for social support and control over individual behaviour, especially by religious organisations (Garrioch 2001). Galster (2001, p. 2112) defined neighbourhood as “the bundle of spatially based attributes associated with clusters of residences, sometimes in conjunction with other land uses”. Forrest and Kearns (2001, p. 2134) defined neighbourhood as “overlapping social networks with specific and variable time-geographies.” In a similar vein, Howard Hallman (1984, p. 113) claims "a neighbourhood is a limited territory within a larger urban area where people inhabit dwellings and interact socially". The definition of the European Union (EU), however, offers somewhat a broader conceptualization, incorporating elements of the definitions above. The EU (2001) defined neighbourhood as a physical space with complex interactions between different activities and actions, which collectively form the living environment for the inhabitants. Clearly, the elements of space, people, interactions and activities are core attributes which shape neighbourhoods. Given these attributes and broadly categorised into demographic, institutional, topographic and social, the likelihood of defining, creating and measuring neighbourhoods, becomes more pertinent (Galster 2001).

In an attempt to enrich scholarly understanding of neighbourhoods, several models have been proposed. The most acknowledged, however, are those based on physical and administrative boundaries and subjective identifications (Forrest 2009; The Young Foundation 2010). A neighbourhood may be defined by physical boundaries such as waterways or highways and by administrative boundaries, such as Census areas or tracts (Holland et al., 2010). Particularly, planners and urban designers often define neighbourhoods based on important building blocks of urban social spaces (Kallus and Law-Yon 2000). Although this official delineation is well acknowledged and applied (Geyer 2018), other scholars believe that neighbourhoods are largely social productions (Massey, Gross, and Shibuya 1994; Martin 2003; Bond et al. 2015).

Though often criticised as being inaccurate and biased, subjective definitions of neighbourhood have achieved considerable traction and are especially favoured in neighbourhood and community studies (Keller 1968; Gould and White 1974; Hunter 1974; Guest and Lee 1984; Anderson 1990; Lee and Campbell 1997). Here, residents dwell on features including demographics (e.g., age, race, sex) and physical characteristics (e.g., landmarks, streets and rivers) to define their neighbourhood (Haeberle 1988). Socially produced spaces, it is argued, although incongruent with administrative or census tracts boundaries, are often similar to the latter when viewed from aggregate measures of socio-economic indicators (Coulton et al. 2001). Such neighbourhood units are often vernacular in nature, hence, indistinct (Getis 2015). This notwithstanding, in a situation where limited resources have to be distributed, subjective demarcations become important for planners to divide a region for the purposes of resource allocation. These arbitrary divisions, it is noted, sometimes become official neighbourhoods even when the urban area undergoes rapid transformation (Getis 2015).

In the words of Galster (1986, p. 243), the challenge in delineating precise measures of neighbourhood often leaves scholars “impaled on the horns of a dilemma. On the one hand, views of neighbourhood grounded in individual cognition and collective sentiment have had little operational content since they have not been employed in the specification of boundaries. On the other hand, views of neighbourhood as defined by clear administrative boundaries have had no necessary correspondence with the perceptual reality of individuals in the given area”. These disparate narratives have forced social scientists to think more creatively about the operationalization of the concept in empirical research (Woodredge 2002).

## 3.2 Dimensions and boundaries of neighbourhood

Efforts to understand the dynamic nature of neighbourhood as a spatial unit have led to several scholarly perspectives. Elliott et al. (2006) propose three critical dimensions of neighbourhood; (1) as a small residential area located within a larger community, (2) an area that enables direct interaction among social entities and provide impetus for the formation of social life, and (3) an area which is embedded within the psychological identities of both residents and non-residents, often resulting from the socio-political history of its evolution. These encapsulations clearly suggest the possibility of “multiple and intersecting neighbourhood boundaries” (Campbell et al. 2009. p 11). The boundaries are defined by physical landmarks and critical resources, the spatial extent of social interactions, and or through analysis of residents’ cognitive imagination of their immediate environment (Coulton, Korbin and Su 1996; Downs and Stea 1973). The various spatial boundaries of neighbourhoods are discussed below.

### 3.2.1 Neighbourhood as a place

Neighbourhoods are where people reside and spend a lot of their time. For urban residents, neighbourhoods are places that determine their quality of life and economic standing (Logan and Molotch 1987). Agnew (1987; 1989) defines place as locale (site of daily life), location (a site with connections and relations to broader social, political, and economic processes at varying levels), and sense of place (affective feelings). According to Escobar (2001), places are created through two processes: political economy and humanistic sense of place. While political economy shapes places through local and global economic processes of capital, the sense of place reflects the sentiments of people about a place, derived principally from experiences, personal attachments and social relations.

Social interactions are critical in shaping the meaning of places (Gotham 2003). Thus, people build their sense of place and in turn this determines how such places fit into their social identity (Stedman 2002). According to Martin (2003), the neighbourhoods that formed the bases of work of the University of Chicago sociologists in the first half of the 20th century were places where people lived and worked, in addition to worshipping. In their article, and using data from ten cities, Coulton et al. (2011) demonstrates how resident-drawn maps gathered in a household survey can be used to identify and define individual and collective neighbourhoods. Place plays a major role in shaping peoples’ life. This is reflected in a report by the UK Department of Health, which stresses the impact of a neighbourhood as a place on health and general well-being. The report highlights that in a neighbourhood where people know and trust each other, and where they have opinion on community affairs, residents always find support in coping with daily life stresses and shocks (Morrow 1999, p.745 as cited in Forrest 2009). Such a place can be referred to as a resilient neighbourhood.

### 3.2.2 Neighbourhood as a community

The idea of defining neighbourhood as a community is not new, and the two concepts are sometimes thought to be synonymous (Wellman and Leighton 1979). Chaskin (1997) notes that the two terms are confusing, as their distinction is blurred, nevertheless, their relatedness is well acknowledged (Blokland 2003). The main difference has to do with their boundaries. Unlike most subjectively defined neighbourhoods, communities have clearly defined borders and boundaries (Aitken 2000, p. 74). Geographically demarcated neighbourhoods as communities are considered the most prevalent in urban and community

studies (Park et al. 1967; Wellman and Leighton 1979; Raco and Flint 2001; Forrest and Kearns, 2001). A neighbourhood may also qualify to be classified as community when constructed following administrative or census tract definitions. Community invokes connection, including shared beliefs and concerns. The connections that unite a group of people together in a given community, it is believed, may not always be present in a place (Chaskin 1997). Regardless, neighbourhood as a community continues to be central to the work of social scientists and policy makers, especially in poor and marginalized areas, where people often either have strong sense of community or lack such, as a result of degraded social capital (Forrest 2009).

### **3.2.3 Neighbourhood as a unit of policy formulation**

The need to address local-level issues serves as a precursor for planning initiatives to consider and incorporate neighbourhood particularities in decision-making process. Meegan and Mitchell (2001) are of the view that national and regional government policies to tackle, for instance, exclusion and inequality are best approached at the neighbourhood level. The neo-liberal forms of governance, which attach importance to inclusiveness and delegated government functions (Peck 1995; Elwood and Leitner 2003), it is argued, have contributed in reinforcing participatory local level policy and decision making (Martin 2003). At the neighbourhood level, policy and planners seek to residents' input on matters concerning their general welfare (Raco and Flint 2001; Meegan and Mitchell 2001; Docherty, Goodlad and Paddison 2001; McCann, 2001).

But of particular interest is when a political agenda of creating a new neighbourhood boundary clashes with local interests. In such a situation, Martin (2003) argues that neighbourhood can emerge and be characterised by activism, as a measure to counter government imposition. To this end, Meegan and Mitchell (2001) contend that neighbourhoods are sometimes shaped by people's sentiment and events. Martin (2003) cites the work of Robinson (2001) to explain this scenario. Robinson's work explored the reaction of people to a proposed road in Glasgow, which according to them, would impact on nearby residential areas access to a local recreational park, in addition to worsening already deteriorated economic woes. People in the area expressed "fears of exclusion and segregation" about the proposed land-use change. This fierce resistance to land-use change resulted in a new, more rigid boundary for the neighbourhood (Robinson 2001, p. 101, as cited in Martin 2003). Similarly, McCann (2003) reported how residents' concerns over sprawl and growth in Austin, Texas, were transformed into new neighbourhood-based on planning and zoning programs.

## **3.3 Emergence of neighbourhood as a research unit**

In the field of urban planning, the neighbourhood concept is believed to have originated from Ebenezer Howard's vision of the "garden city" in the 19<sup>th</sup> century, advanced as a vehicle to curb slum emergence and associated problems in the industrial world, especially in London (Hall 2002). Howard conceptualised the reorganization of city structure based on radiating concentric rings of avenues, housing, and businesses, around a civic centre. In this concept, small-scale businesses were prioritized over large-scale factories, with the idea that the small-scale enterprises would enhance development of interpersonal relationships and social cohesion among residents. Howard's garden city was limited to around 30, 000 people, living on 1000 acres of land, and surrounded by rural land uses (Anderson 2017). Although the development of a more socially equitable society through planning processes

never fully materialised, Howard's concept later played an important role in influencing planned communities across Europe and the United States (Anderson 2017). The neighbourhood concept in planning, identified by sociologist and planner, Clarence Perry, is said to have emerged from ideas for the garden city. Perry (1929) called for the criticality of design in enhancing neighbourhood identity in well-planned communities.

Anthropologists have a different perspective. In the field of anthropology, the concept is widely associated with the work of the Chicago School in the 1920s and 1930s (Konings, van Dijk and Foeken 2006). The underlying approach of their work has been termed 'ecological' (Hunter 1974, 5), a term attributed to Robert Park, who applied concepts of dominance, symbiosis and succession from plant ecology to urban environments. Park believed that the fundamental structuring of urban areas is competition for space (Hannerz 1980, p. 27). Hannerz encapsulates this approach as resembling natural selection, by which "the strongest inhabitants of the urban environment would occupy the most advantageous locations, and others would adjust to their demands". For Hannerz, the Chicago School's idea of formulating a general theoretical models of urban transformation on the basis of their ethnographic studies in Chicago implied "that the Chicago spatial order was the spatial order of any city" (Hannerz 1980, 57), which was later seen as a major weakness (Burawoy 2000, p. 14).

Neighbourhood scholarship can be traced back to the industrial urbanization of the late-19th and early 20th centuries. This is the period when scholars started analysing the effects of urban residence on various forms of social life and peoples relationships with their communities (Tönnies 1955; Durkheim 1964; Simmel 1971). Here, the Chicago School is widely credited for pioneering this line of research with their ethnographic studies, which sought to provide neighbourhood typologies and the cycles of land-use transformations change that precipitated temporal transitions of neighbourhoods (Park et al., 1967). Hunter (1979, p. 267) points out three main scholarship focus during the time; "(1) typologies, (2) stages of change, and (3) functions which include economic, administrative, political and social". While the typological approach, derived from the Chicago School of urban sociology, identifies core demographic (e.g., ethnicity, age, sex) and physical (e.g., housing stock) environmental characteristics that together form a neighbourhood type, that of stages approach (also associated with the Chicago School) deals with neighbourhood development from the perspective of economic growth and human mobility within urban areas. The functional category, on the other hand, analyses neighbourhoods through the functions they perform, including various administrative, economic and social functions (Hunter 1979). Castells (1977) is of the view that urban neighbourhoods have a primary function as a locus of social production and reproduction of labour force, with government having responsibility of providing critical services (e.g., recreational centres like parks, hospitals and clinics, schools) to enhance liveability.

### **3.4 Neighbourhood change**

Neighbourhood change has received considerable attention (e.g., Lupton and Power 2004; Megbolugbe, Hoek-Smit and Linneman 1996). Scholars have studied types and causes of neighbourhood change, as well as policy implications of neighbourhood decline (Tunstall 2016). The temporal dynamics of neighbourhood, particularly physical decline and the onset of social and economic deprivation are major concerns in urban management and policy. Neighbourhood poverty exacerbates living conditions in poor neighbourhoods while intensifying marginalization and political agitation among residents (Geyer 2018). Urban

sociology work on neighbourhood decline (e.g., Grigsby et al. 1987; Park and Burgess 1925), and specifically spiral of decline of social housing estates (e.g., Tunstall and Power 1995), have been particularly influential in strengthening this area of inquiry. Appreciation of neighbourhood change is critical as it has great policy implications, particularly concerning how absolute or relative negative neighbourhood change (physical, economic, cultural or socio-economic) can be addressed through policy measures (Tunstall 2016).

The literature is full of models of neighbourhood change (Megubogle et al. 1996). Existing models, however, highlight issues, including trajectories, characteristics and causes of neighbourhood change, with less attention given to the particularities and extent of change (Tunstall 2016). Scholars have attributed this gap to lack of longitudinal data on neighbourhoods (Gregory, Dorling and Southall 2001; Meen, Nygaard and Meen 2013). The nature of neighbourhood change and poverty, in addition to the various causal factors operating at various scales, is particularly a matter of debate among scholars (Lang 2000). One major strand of the literature captures long-term stability in relative neighbourhood status over time, with path dependency or lack of relative change recognised as one of the major factors underlining the explanation of neighbourhood temporal dynamics (Meen et al., 2013; Robertson et al., 2010). For instance, many critics of regeneration policy are of the view that whatever change theory is favoured, regeneration tends to result in population movement rather than in situ population change, with state-sponsored gentrification likely to occur within projects lifespan (e.g., Uitermark and Bosker 2014). Observations of regeneration policy in the UK, however, shows little change in the rankings of local authorities in terms of relative deprivation despite appropriate policy measures (Tunstall 2016). Other empirical evidence has shown long-term stability in relative neighbourhood status, with classical example being the 1896 relative social status of neighbourhoods in inner London which was consistent with deprivation measures for the same area nearly a century later in 1991 (Dorling, Mitchell, Shaw, Orford and Smith 2000). Using 15 years data from England, Tunstall (2016) demonstrates what we know about neighbourhood change, and corresponding regeneration policy needed to enhance it. Further data on unemployed and middle-class residents as a representation of all residents in all neighbourhoods in England and Wales for the periods 1985–2005 and 2001–2011, showed that “neighbourhoods are generally slothful rather than dynamic”. Tunstall notes that significant changes in neighbourhoods can only be expected over a considerable period than conventional regeneration policy timespan. For Tunstall (2016, p. 18), “it is not clear how much neighbourhood change goes on without policy, including in neighbourhoods that have declined and are deprived by some measure. Thus, we don’t know how difficult a task of neighbourhood regeneration policy faces when it attempts to instigate change”. Tunstall calls for more information on the pervasiveness and scale of neighbourhood change to allow for study and theorization of neighbourhood change.

A major concern of neighbourhood change literature is the range of negative outcomes associated with neighbourhood poverty. Evidences are mixed. On one hand, poverty has long been correlated with unfavourable outcomes, such as low-levels of school readiness and long-term academic attainment for children and youth (Garner and Raudenbush 1991; Ensminger et al., 1996; Brooks-Gunn et al. 1997a, 1997b; Klebanov et al., 1998; Caughy and O’Campo 2006). Evidence shows that children from high poverty areas are likely to be stunted, experience infant mortality, child abuse and school dropout as well as encounter behavioural problems and teen pregnancy (Gephart 1997). An analysis of 2000 Census data estimated that over 6 million children in the U.S. lived in high-poverty neighbourhoods, with minority children who happen to be African-American and Hispanic, disproportionately represented across high prevalent neighbourhoods (O’Hare and Mather 2003). Neighbourhood poverty has longed remained a major social issue in the US, particularly in

Black communities. Wilson showed that the loss of African American elites and the middle class left many neighbourhoods desolate, with no prospects for jobs and better education (Wilson 1987). On the other hand, living in less poverty prevalent neighbourhoods has been observed to impact positively on cognitive abilities beyond the influence of family characteristics (Brooks-Gunn et al. 1993). The effect of exposure to relatively rich neighbourhoods becomes apparent and more influential during schooling days of children, as this is the period children are likely to be influenced by peer groups in their neighbourhoods. In addition, the level of unemployment in a particular neighbourhood also influences how children behave and physically relate to people (Coulton et al., 1995; Chase-Landsdale et al., 1997).

### 3.5 Neighbourhood effects

A related focus is neighbourhood effects. Neighbourhood effects have received considerable attention over the past three decades, particularly in the developed world. It is the idea that living in disadvantaged areas has a negative effect on peoples life chances over and above the effect of their individual characteristics (van Ham and Manley 2010). Thus, it is a field that deals with how people's immediate environment influences their life chances, beyond individual and family characteristics (Raudenbush and Bryk 2002). The neighbourhood effects theory is believed to have emerged from the work of Lewis (1961), who argued that a 'culture of poverty' hindered the life chances of inhabitants living in poor neighbourhoods in Mexico City (Martin 2003). Other scholars are of the opinion that neighbourhood effects literature is traced to the work of an American Sociologist Herbert Gans (1968) in the 1960s (van Ham et al. 2012). The popularity and currency of the concept, however, has been attributed to the work of William Julius Wilson and his book "The Truly Disadvantaged: The Inner City, the Underclass and Public Policy" (Wilson 1987). Wilson dwelt on ethnographic research to provide a detailed account of the effects of living in concentrations of poverty in Chicago and he concluded that the "local conditions and the social practices of residents of poor areas cannot be understood independently of the macro social and economic forces which shape them" (Darcy and Gwyther 2011). While ecological approaches view such effects as a product of external influences, subcultural sees it as impact of human urgency. Political approaches on the other hand, uphold the view that neighbourhood effects are structural, resulting from 'social relations of production and accumulation' (Geyer 2018). The implicit literature assumption is that there exists a relationship between neighbourhood environment and social, economic and environmental outcomes. In view of this, studies have concentrated on analysing the impacts of the 'social and physical milieus immediate to residential environments upon individual behaviour' (Martin 2003). Scholars have reported neighbourhood effects on various outcomes, including but not limited to social exclusion, school dropout rate, educational achievement, health and social and occupational mobility (Ellen and Turner 1997; Galster 2002; Dietz 2002; Durlauf 2004; van Ham et al. 2012). According to van Ham et al. (2012), the increasing scholarship on neighbourhood effects, reflect not only interest, but also the difficulty in finding answers to the question how important neighbourhood effects are. The effects are widely acknowledged, however, it is unclear the causal mechanisms which drive them, their relative importance compared to individual characteristics such as education, and under which circumstances and where these effects are important (van Ham et al. 2012).

In their study, Ellen and Turner (1997) presented six distinct mechanisms through which neighbourhood factors may influence individual outcomes: quality level of local services, socialisation, peer pressure, social networks, exposure to crime and violence, and physical

distance and isolation. Other intervening factors equally important in determining neighbourhood life chances include income, household tenure and parent's level of education (Talen 1999; Buck 2001; Ellaway et al. 2001; Forrest and Kearns 2001). The social and built environment have been observed to play a critical role in neighbourhood participation of various kinds (Oswald et al. 2011, as cited in van Der Pas et al. 2015). Caughy et al. (2013) observed that poor physical conditions of a neighbourhood correlates with acute behavioural problems among children, with a radius between 400 and 800 metres surrounding a child's home being a geographic extent of concern. High poverty rates, single-parent households, unemployment, absence of rich and well-educated neighbours, as well as high rates of welfare support programs, have been found to play important role in life outcomes of children (Ellen and Turner 1997). Such neighbourhood factors are deemed critical in influencing, for instance, the cognitive development of children (Vaden-Kiernan et al. 2010). Neighbourhoods are widely regarded in theory and research not only as important geographical unit, but also as an ecological space for understanding the development of children (Levanthal and Brooks-Gunn 2000; Roosa et al. 2003; Nettles et al. 2008; Swisher 2008).

The poverty-neighbourhood nexus has particularly received considerable attention. Life-chances of individuals, measured usually by poverty and employment, are known to be strongly associated with neighbourhood factors. Evidence shows that the probability of finding job in poor neighbourhood is lower than in affluent neighbourhoods (Buck 2001). Ellaway et al. (2001) reported that neighbourhood factors affect peoples' perceptions about their health, about area problems and social cohesion in a neighbourhood. Elsewhere in the developing world, evidence shows that individual-level subjective well-being is influenced by neighbourhood level socioeconomic status (Cramm et al. 2011). This finding is corroborated by that of van Der Pas et al. (2015), who examined components of home and neighbourhood among older people. The study reported that features of home (e.g., basic amenities, household composition, financial status and safety) and neighbourhood (e.g., ability to shop for groceries, participate in organizations and feel safe from crime) are positively associated with life satisfaction. These issues, among others, continue to make neighbourhood more appealing, especially to policy makers (Forrest and Kearns 2001; Kintrea and Atkinson 2002), as a critical spatial unit where geographically tailored solutions to socioeconomic and environmental problems can be implemented with high optimal societal benefits.

A major challenge in neighbourhood effects research is the identification of true causal effects (Durlauf 2004). Existing studies have failed to adequately address the problem (van Ham et al. 2012), with many overly concentrating on correlations between individual outcomes and neighbourhood attributes (Cheshire 2007; van Ham and Manley 2010).

### **3.6 Importance of neighbourhood as a research unit**

The relevance of neighbourhoods in scholarship, social relations and policy, is well established. While some scholars are a bit sceptical regarding their relevance (e.g. Webber 1963; Fischer 1982), evidence has shown that social processes such as immigration, life style, crime, unemployment, and housing quality are often best studied and understood at the neighbourhood level (Kawachi and Subramanian 2007). Neighbourhoods create social identity and meaning (Forrest 2009). While critical in shaping cities' futures (Temkim and Rohe 1996), neighbourhoods produce the necessary environments that encourage interaction among residents, which aid in building vital societal notions about community, in



addition to understanding peoples' perception of their social environment (Swatt, Varano and Uchida 2012).

Regional scientists have argued that neighbourhoods as 'mini regions' are critical because they have immediate impact on the well-being of households more "than regions through delivering a set of social conditions, physical amenities, and local public services, and through shaping access to the broader region" (Ellen and O'Regan 2010). Studying neighbourhoods as a core thematic area under regional science, it is argued, has great potential in enriching the discipline's understanding of core regional issues. The argument is that households' and businesses choose neighbourhoods to be located in, not just regions, hence, such places become hub for "broader regional development" (Ellen and O'Regan 2010). These local areas can become the engines and incubators of groundbreaking innovations and creativity with concomitant long lasting effects on local, regional and national development.

Neighbourhoods play important role in understanding behavioural characteristics. Thus, peoples' actions and inactions are better appreciated if the context and or neighbourhoods are taken into consideration (Subramanian et al., 2003), forming a formidable base for life in the process. This is especially important as many? people spend much? most of their time and lives in the neighbourhood, which plays significant role in determining their economic and social life (Sedaghatnia et al. 2013). Castells (1996, p. 423) argues 'the overwhelming majority of people ... live in places, and so they perceive their space as place-based'. They are places where people and organizations, including government agencies give meaning to their sociocultural and economic realities (Thomas and Thomas 1928).

The relevance of neighbourhoods also become evident in population sampling for research purposes. Grouping observations into neighbourhoods helps to avoid the problem of spatial autocorrelation within the sample. Thus, a well-defined neighbourhood has the potential in ensuring unbiased spatial units sampling (Getis 2015), with higher degree of independence. Healey (1998) also points out that neighbourhoods provide a useful lens and scale not only for studying, but also for understanding social relations of everyday life.

A healthy neighbourhood extends to the broader urban society. Neighbourhoods are favoured for social policies because of their ability in solving social problems. Particularly, the creation of mixed neighbourhoods have been strongly advocated (Kearns and Forrest 2000; Veldboer et al., 2002; Blokland 2008; Graham et al., 2009; Arthurson 2012; Bolt and van Kempen 2013). The likes of the National Strategy for Neighbourhood Renewal in the UK, the Socially Integrative City programme in Germany, and the policies for "hometown making" (Furusato-Zukuri) in Japan (Wissink and Hazelzet 2012), aimed at fostering a sense of belonging and enhancing social interaction, as well as curbing social ills, have been promoted (van Kempen and Wissink 2014).

The advent of information technology, including social media platforms, with their superficial social relations are believed to be eroding societal bonds which exist among people within urban space (Forrest 2009). The deterioration of social cohesion, especially in urban settings has reinforced the importance of neighbourhood as a critical space for rebuilding and strengthening social capital. The works of Putnam (1993a, 1993b) have particularly influenced policy makers' decisions on the criticality of social relations in creating and revitalizing local communities at the neighbourhood level.

Further, neighbourhoods are core units of planning and development strategies. Various urban services deemed critical for improving wellbeing can be effectively tested and

implemented at the neighbourhood level (Olowoporoku et al. 2017). Redevelopment strategies, particularly regarding gentrification, where people of higher economic status displaces those of lower class, are effectively engineered and implemented at the neighbourhood level.

### 3.7 Approaches to studying neighbourhood

Over the years, scholars have applied various methods in studying neighbourhoods. In general, quantitative techniques, such as the application of Geographic Information System (GIS) and statistical modelling have been dominant. In addition, cluster and factor analysis have been used to distinguish between places with different characteristics. Scholars have used GIS-based functions to analyse complex neighbourhood problems (e.g., Weeks et al. 2007; Willemse 2013; Jagarnath and Thammbiran 2017). The suggestion has been that more GIS-based spatially continuous functions are needed to analyse socio-demographic and environmental data (Srinivasan et al., 1996; Martin 1998; Wong 2001). GIS, as a complex system to capture, view, organize, analyse and present spatial data (Gershoff et al. 2009), has been widely applied in many fields, including sociology (e.g., Sampson, Raudenbush and Earls 1997) and social work (e.g., Wong and Hillier 2001), education (e.g., Teitler and Weiss 2000), as well as psychology (e.g., Aneshensel and Sucoff 1996). Scholars use the system to delineate and quantify neighbourhood impacts on residents (Gershoff et al. 2009).

To allow for local level participation in planning processes, researchers have employed techniques, such as community participatory GIS mapping (Schnell et al., 2005). Researchers use residents' perceptions to subjectively characterize their environment; a means of promoting local level planning participation (Talen 1999b; Ceccato and Snickars 2000). The emergence of GIS applied research has made it possible for scholars to study residents' socioeconomic and environmental perceptions at the neighbourhood level. More importantly, recent advances has made it possible to develop and interpret perceptual databases at deeper depth (Schnell et al. 2005).

Land-use models have been used to delineate neighbourhood residential areas into cohorts, including income and residential status. These models, however, have been heavily criticized, first, on the bases that they are not comprehensive in understanding the dynamics of neighbourhood change (Arguello et al. 2013). Thus, land-use models are not sophisticated enough to enable appropriate assessment of the complex urban dynamics, social relationships and the fluidity and circulations among urban residents (Dierwechter 2004; Simone 2010). A related but more advanced approach has been adopted; the application of remote sensing, which has high capability in presenting a more dynamic visualization of urban change. This approach utilises vegetation cover, housing density and dwelling configurations to capture temporal dynamics as a proxy measure of neighbourhood change and spatial extent of informal settlements (Weeks et al. 2007; Stoler, Daniels and Weeks 2012). According to Arguello et al. (2013), this is useful especially in analysing large-scale changes, but less effective in understanding contextual changes at the neighbourhood level.

Application of statistical models have also received considerable attention. For instance, multilevel models have been used to study neighbourhood effects and early child development (Vaden-Kiernan et al. 2010), neighbourhood wellbeing in South Africa (Cramm et al. 2011) and neighbourhood space and BMI association in Egypt (Mowafi et al. 2012). Given that scholars in education, sociology and social work, psychology and urban studies study the extent to which neighbourhoods affect human behaviour and life chances, relevant questions are best analysed using multilevel techniques (Lee 2000). Other scholars have

employed ordinary regression analysis to study neighbourhood perception on safety and vulnerability in Nigeria (Okunola and Amole 2012), neighbourhood change and liveability in South Africa (van der Pas et al. 2015; Geyer 2018) and spatial dependence in child behaviour in the USA (Caughy et al. 2013). Other relevant statistical methods include the application of path analysis to study neighbourhood social cohesion in China (Liu et al. 2017), index technique to define neighbourhoods in Ghana (Weeks et al. 2007) and factor and cluster analysis (Gershoff 2009; Vaden-Kiernan et al. 2010; Geyer 2018).

In addition to the quantitative methods, qualitative techniques, such as interviews, observations, as well as focus group discussions have been widely employed by many scholars. For instance, Coen et al. (2008) used case study to understand the relevance of neighbourhood stores in Bolivia. Horn (2004) employed interviews to study neighbourhood transitions in South Africa. Similarly, Kyessi (2005) used interviews to study neighbourhood water management in Tanzania. Other studies have employed mixed methods approach (e.g., Nkurunziza 2006; Westaway 2009; Arguello et al. 2013). Given the complex and dynamic nature of neighbourhoods, applying mixed methods holds great promise in accurately assessing neighbourhoods, taking into consideration the diverse characteristics and experiences of residents. Clearly measuring neighbourhoods using mixed methods will enable appropriate and tailored local level interventions (Nicotera 2008).

### 3.8 Challenges of neighbourhood research

The study of neighbourhood is bedevilled with lots of challenges, ranging from exact definition, through data to methodological approaches. How to accurately define neighbourhood has longed been a subject of debate among scholars (Bursik and Grasmick 1993; Gephart 1997; Hallman 1984; Keller 1968; Lee and Campbell 1997). The challenge of defining appropriate neighbourhood borders, the relevance of place-based versus person-centred models of social relations in current dispensation, has particularly been a major discourse (Elliott and Sims 2001; Fischer 1982; Wellman and Leighton 1979; White and Guest 2003). Boundary definition is especially important in studying neighbourhood effects. The argument is that scholars description “of the social, organizational, and cultural capacity of a neighbourhood, its level of disorganization, or its cohesiveness, depends on where the neighbourhood’s boundaries are drawn a priori. If these initial boundaries miss the mark, the study findings may be misleading” (Campbell et al. 2009). The study of Hipp (2007) clearly demonstrates the sensitivity of neighbourhood boundary. In the study, Hipp illustrates the sensitivity of neighbourhood effects research to boundary definition by offering empirical evidence that depicts that neighbourhood attributes vary in their effects on perceptions of crime and disorder, owing to whether they are assessed at the tract or block level. Ad hoc neighbourhood boundary definition is likely to affect the ability of empirical studies to objectively measure neighbourhood characteristics (Ellen and Turner 1997). Given that scholars usually measure neighbourhood characteristics at census tract level, in a situation where such tracts fail to accurately capture critical neighbourhood conditions, study validity may be hampered. For instance, while factors such as vandalism or crime may be dependent on a family’s block that have an impact, others may be due to conditions in the larger geographical space (Ellen and Turner 1997).

A related challenge is data availability. Neighbourhood level data are not readily available in most countries, especially in the developing world. A UN-Habitat report (2010, p. 2) has pointed out that inadequate data on urban Africa represents a “knowledge vacuum, resulting in uninformed policy or decision-making, or the wrong scale or focus”, resulting in outdated

and limited neighbourhood knowledge (UN Habitat, 2010 as cited in Arguello et al. 2013). According to Weeks et al. (2007), a particular neighbourhood characteristic of interest, for instance, age cohort, may cut across a census division, a situation that can result in errors, especially when effort to define neighbourhood is contingent on available census divisions data (Weeks et al. 2007).

Another challenge is in the area of methodological approaches, particularly in studying neighbourhood effects. Ellen and Turner (1997) identified three major methodological limitations. The first is the difficulty in identifying and assessing neighbourhood conditions that are critical in constructing outcomes, for instance, for children and families. The second is that neighbourhood effects may be nonlinear, hence, difficult to understand. The third pitfall, according to the scholars, is the challenge in disentangling “the effects of neighbourhood environment from individual or family characteristics, especially characteristics that are difficult to measure and observe”. Inability to effectively tackle these limitations, it is argued, could result in studies overestimating the effects of neighbourhood environmental factors on individual outcomes (Ellen and Turner 1997). Linked to this is the issue of defining research objects. Researchers have acknowledged the difficulty in defining, for instance, succinct surrogate factors to assess neighbourhood change. This is challenging because neighbourhoods are under constant change (Fong and Shibuya 2003).

### **3.9 Neighbourhood conditions, health and education**

This section looks at the neighbourhood-health-education connections, which is a central concern of SHLC. Studies examining the interlinkages between neighbourhood conditions and health and education have increased over the past two decades (Oakes et al., 2015; O’Campo et al. 2015). Neighbourhood conditions have long been observed to correlate with health and education of residents. Particularly, features such as walkability, poverty, social cohesion and crime have been identified as major factors inhibiting health outcomes at the neighbourhood level (Diez Roux and Mair 2010). Investigations in the domain of health-neighbourhood relationship have largely been spearheaded by epidemiological studies seeking to examine the patterns and trends of disease and health across geographic regions and populations (Berkman and Kawachi 2000; Macintyre 2002). More importantly, recent analyses have been given practical impetus as public health continues to focus on place-based interventions to promote population health, while bridging health inequality (Marmot et al., 2008; Frieden 2010). Although this area of research is beset with lots of challenges, including weak study designs, poor measurement of neighbourhood conditions and over reliance on administrative neighbourhood definitions (Arcaya et al. 2016), significant contributions have been made. Scholars have studied many issues with varying degrees of evidences, including neighbourhood conditions or effects on early child health outcomes (Sellstrom and Bremberg 2006; Christian et al., 2015), general health outcomes (Pickett and Pearl 2001; Yen et al., 2009), mental health (Truong and Ma 2006), perinatal outcomes (Metcalf et al., 2011) and depression (Kim 2008; Mair et al., 2008). The emerging conclusion from these studies is that neighbourhood conditions play a major role in determining health outcomes.

Neighbourhood conditions also matter for educational attainment, particularly among children and youths (Nieuwenhuis and Hooimeijer 2016). Critical traits such as cognitive skills, problem solving competency, interpersonal relationship, self-control and general intelligence are acquired through education (Mirowski and Ross 2005). These traits are crucial for social status mobility and meaningful leaving in society. Importantly, education

positively correlates with better health outcomes for residents (Zimmerman and Woolf 2014). It is argued that studies on educational outcomes that focus on students' residential areas are likely to overestimate the importance of local schools, just as those on educational outcomes that do not consider the school environment (Bernelius and Kauppinen 2012). To Bernelius and Kauppinen (2012), education is critical for neighbourhood and individual well-being, as it plays an important role in determining life outcomes. Evidence from Finland, for instance, shows that people living in well-educated neighbourhoods are overrepresented when it comes to academic options (Kauppinen 2004, 2007). Evidence again shows that deprived neighbourhoods, where there is higher rates of unemployment, have few individuals who can serve as role models of educational merit, hence, people are unlikely to cherish the essence of education in their life (Wilson 1996; Ainsworth 2002). Literature on neighbourhood conditions and education also largely concur that neighbourhood conditions are critical for educational outcomes.

Geographically, studies investigating how neighbourhoods affects health and education have been biased, with most focused on the developed world. Given that the social, economic and environmental contexts between developed and developing worlds differ markedly, attempts to study neighbourhood effects on health and education in developing countries, especially in Africa and Asia using empirical data would be a step in the right direction, with every potential to make significant contribution both in science and in practice.

## 4 Neighbourhood studies in developed and developing countries

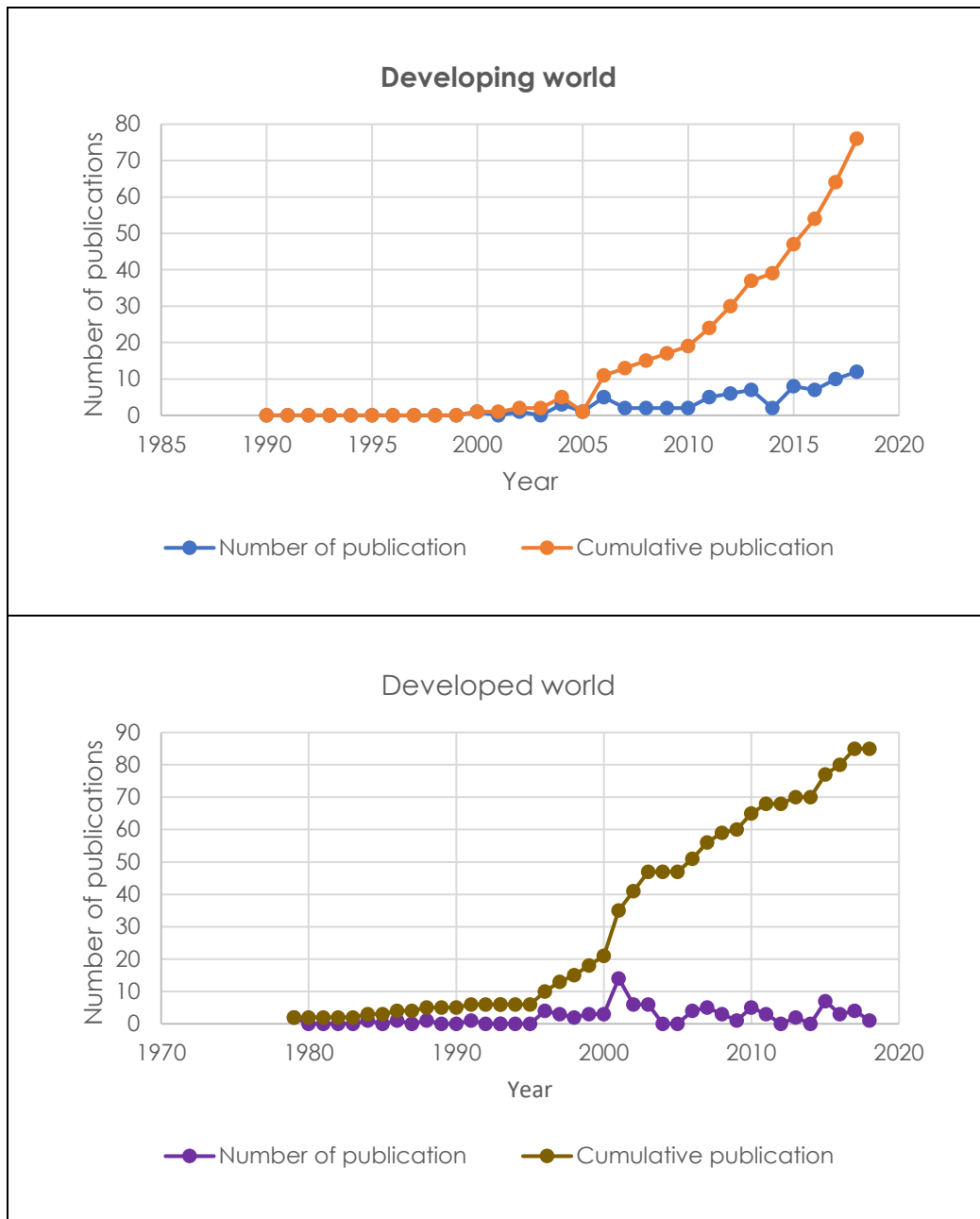
Decades ago, scholars viewed neighbourhoods as a spatial unit for understanding the dynamism in urban environments (Brand 1972; Konadu-Agyemang 2001; Pellow 2008). The advent of globalisation has led to a paradigm shift (Arguello et al. 2013), with current research capturing wide range of perspectives, including but not limited to definitional constructs, neighbourhood effects and change, social capital, residential segregation, as well as satisfaction and lifestyle preference (Forrest and Kearns 2001; Holland et al, 2010; van Kempen and Wissink 2014). Generally, neighbourhood research seeks to examine perceptions and experiences in addition to measuring neighbourhood effect on life chances among residents (Leventhal and Brooks-Gunn 2000; Sampson et al., 2002).

The relevance of neighbourhood scholarship was illustrated in 2001, when *Urban Studies* published a special issue on neighbourhood. This was to allow scholars make definitional contribution to the concept, investigate the correlates of neighbourhood effects and life chances (Buck 2001; Ellaway et al., 2001), understand social capital and identities (Forrest and Kearns 2001; Kearns and Parkinson 2001; Purdue 2001), as well as neighbourhood politics and decision making process (Allen and Cars 2001; Docherty Goodlad and Paddison 2001). Also worth mentioning is the contribution on using neighbourhood as an indicator of urban growth and change (Butler and Robson 2001; Galster 2001).

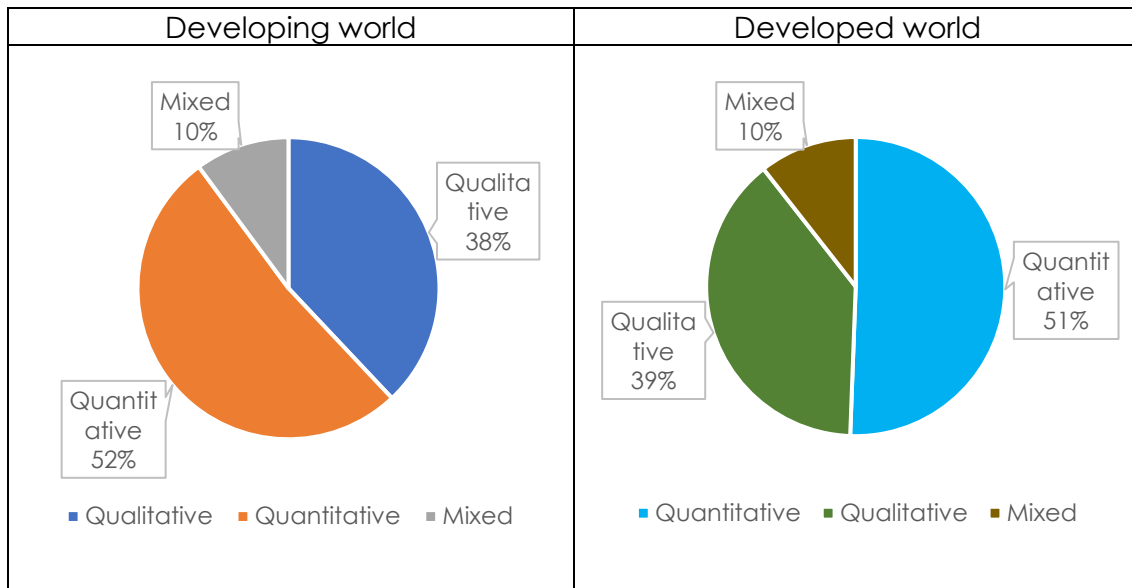
Given the differences in development levels, neighbourhood issues are likely to be distinct between developed and developing countries. The remaining section focuses largely on neighbourhood studies in both developed and developing countries. The idea here is to understand whether there are differences in research focus between developed and developing world.

A total number of 79 articles (for developing countries) and 83 (for developed countries) were retrieved from various sources to understand the scholarship patterns in the developing world. The analyses show a steady growth (from second half of 2000) in the neighbourhood literature on the developing world. In the developed world, scholarship interest started back in the late 1990's. Figure 1 shows that there was a little interest in neighbourhood research between 1990 and 2000 in the developing world, with interest growing only from 2006. In terms of approach (Figure 2) in the developing world, quantitative studies (52%) are dominant, followed by qualitative (38%), with studies combining both approaches (mixed methods) being the minority (10%). Similar picture is painted for the developed world literature, suggesting that neighbourhood studies largely follow quantitative approaches.

**Figure 1: Total number of publications (n = 79 for developing countries, n = 83 for developed countries) and trends of neighbourhood literature in developed and developing countries**

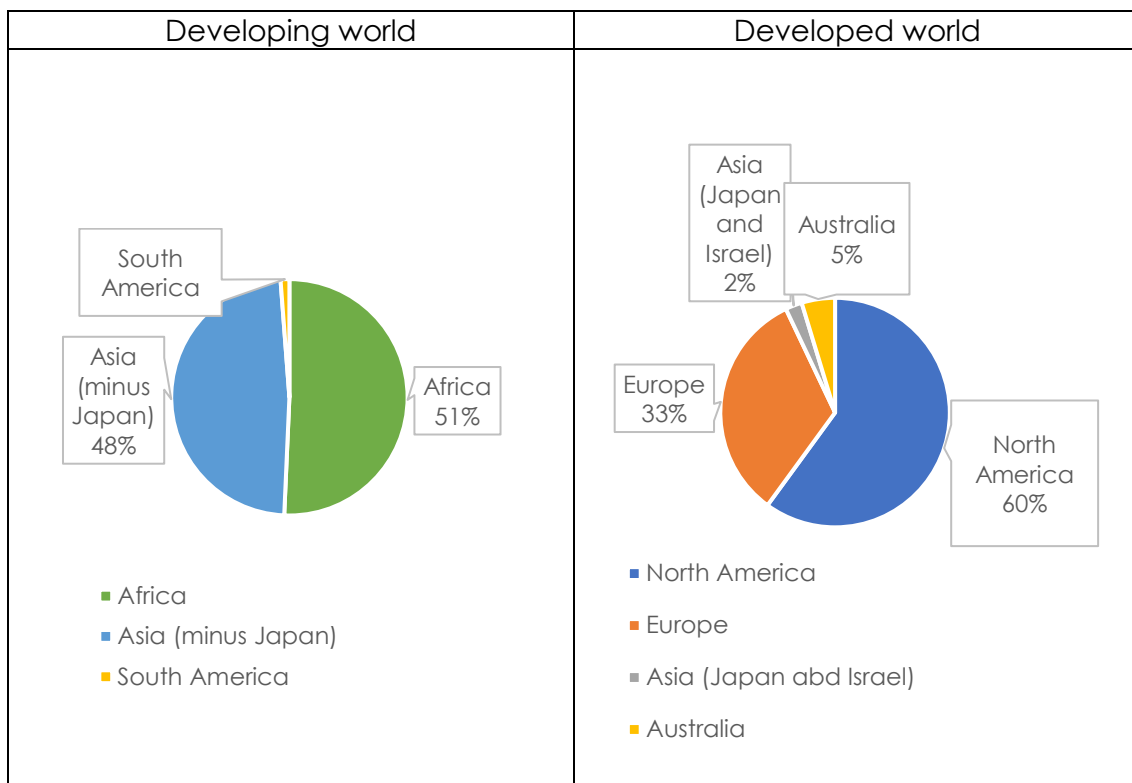


**Figure 2: Methodological approach of neighbourhood literature in developing and developed countries**



With regards to regional distribution, most of the studies in the developing world were conducted on Africa (51%), followed by Asia (excluding Japan) (48%) and then South America (1%). China, South Africa, India and Ghana are the countries with the highest number of publications, represented by 23, 22, 5 and 4, respectively. Figure 3 shows the study distribution. In the case of the developed world, North America leads with 60%, followed by Europe (33%), Australia (5%) and Asia (mainly Japan and Israel) (2%), in that order. The United States, Canada, England and Scotland, and The Netherlands have been instrumental in neighbourhood knowledge production in the Global North.

**Figure 3: Distribution of neighbourhood literature**





## 4.1 Scholarship focus

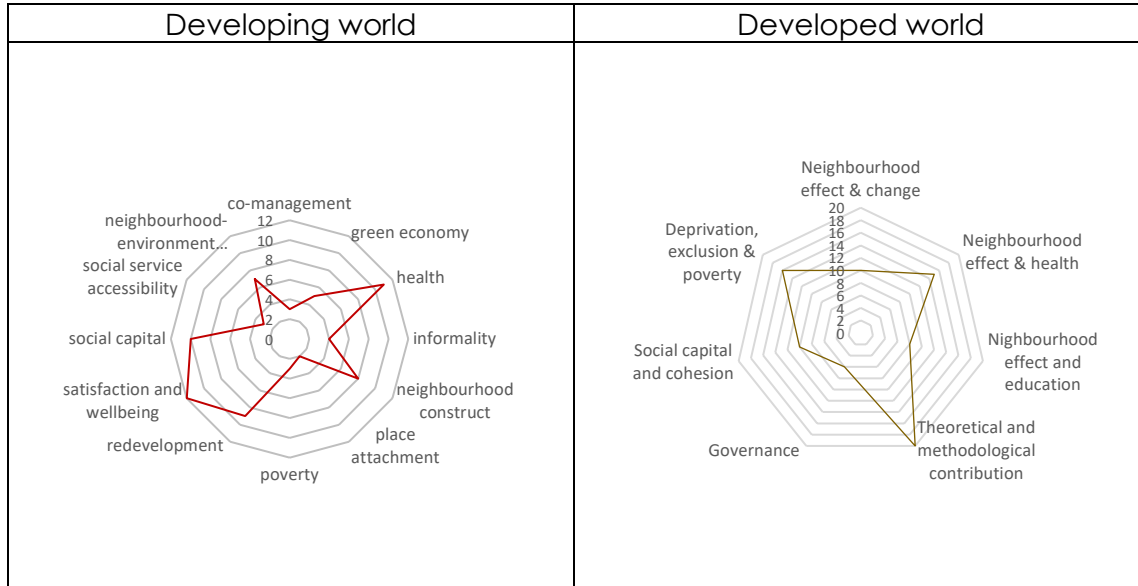
The developed world, particularly United States and United Kingdom have dictated scholarship trajectory in the field of neighbourhood research. As indicated on Figure 4, scholarship attention has focused on theoretical and methodological contributions on areas, such as neighbourhood effect and change, deprivation, exclusion and poverty and social capital.

The research focus in developing countries has a somewhat different orientation. The literature reveals major clusters, including satisfaction and wellbeing (e.g., Sarwar et al. 2006; Westaway 2009; Cramm et al. 2012; Lintelo et al. 2018), health (e.g., Mowafi et al. 2012; Greif and Dadoo 2015; Smit et al. 2016; Azhar et al. 2018), social capital (e.g., Chola and Alaba 2013; Bwalya and Seethal 2016; Liu et al. 2017; Miao et al. 2018) and neighbourhood redevelopment (e.g., Wu 2010; Chitrakar et al. 2016; Liu et al. 2017; Wang and Shaw 2018). For instance, Gramm et al. employed multilevel regression analysis to examine individual- and neighbourhood-level factors that are critical for determining individual-level subjective well-being in Rhini, a deprived suburb of Grahamstown in the Eastern Cape province of South Africa. Westaway (2009) employed regression analysis to study environmental factors that affect neighbourhood satisfaction in disadvantaged and advantaged Johannesburg communities in South Africa. Elsewhere, Azhar et al. (2018) studied neighbourhood factors that influence the prevalence of abnormal mental health status among adolescents in Kuala Lumpur urban residents, while Mowafi et al. (2012) analysed green space and BMI correlates in Cairo, Egypt. Figure 4 shows the clusters and their corresponding number of papers for both developed and developing countries. In order to have general overview of the studies, Table 1 and 2 (in the appendix) present summary of the papers. From Table 1 and, it could be seen that three major disciplines (social sciences, built environment and health science) dominate neighbourhood scholarship in both developing and developed countries, with social sciences sub-disciplines such as Geography and Sociology, leading the knowledge production. In terms of approach, studies have been largely quantitative, with few qualitative studies as already indicated. With respect to data, while studies covering larger scope largely dwell on existing secondary data sets, small scale studies utilize primary data.

Other studies in the developing world have focused on examining contextual residential neighbourhood change, for instance, older slums in Accra (Agyei-Mensah and Owusu 2009), tenements (Huckzermeyer 2011) and social sustainability in Kibera informal settlement in Kenya (Baffoe and Mutisya 2015) and inner-city dynamism in Johannesburg (Murray 2008, 2011). Although the above studies captures elements of neighbourhood effects (e.g., health, education and social capital), it differs markedly from those of the developed world, underscoring the importance of contextualization. In the developed world, neighbourhood effect studies largely focus on issues such as race, segregation, migrants and housing welfare. These issues, although they exist at varying levels, are less pronounced in the developing world literature, especially in Africa, with the exception being South Africa. A classic divergent scholarship orientation between developed and developing countries can be seen in the area of housing environment and neighbourhood effects. While social housing has been the main focus in the developed world, slum upgrading and informality dominate the scholarship terrain in developing countries. It is common knowledge that issues of race, segregation and housing welfare are major social problems in developed countries (e.g., USA, UK and Canada), where migrants numbers continue to soar. But it is less so than in Nairobi, Jakarta or Chengdu. In terms of methodological approaches, there are no sharp differences as studies in both divides use common techniques. However, while developed

countries are noted for significant theoretical contributions in neighbourhood research, most studies in developing countries tend to be applied in nature (Baffoe 2019), with few contributions in spatial delineation of neighbourhood (Weeks et al. 2007; Getis 2015; Zhao and Zou 2017).

**Figure 4: Clusters of neighbourhood literature in developing countries**



## 5 Conclusion

This review aimed to understand how neighbourhood has been defined by various scholars, how it emerged as a major research domain, as well as scholarship challenges, in addition to application in developing countries, with ultimate goal of identifying potential research gaps to set future research agenda. The review shows that the concept is hotly contested. It defies singular definition, with context-specific definitions being dominant. Definitional constructs follow two dimensions; subjective and administrative (mainly census tracts) or geographically boundary demarcations. Elements such as people, social relations, space and activities culminate in creating a neighbourhood.

In terms of scholarship focus, it is skewed, with neighbourhood effects and change, deprivation, exclusion and poverty being the major areas of study, suggesting that there is still room for scientific contribution. Meanwhile, scholars in United States, England and Scotland have been the main actors leading and championing critical debates and discourses at both global and national levels. Interestingly, scholarship focus shifts when viewed from the spectrum of developing countries. Here, and particularly in Africa and Asia, neighbourhood effects and change have received little attention in urban context (Arguello et al. 2013), suggesting an urgent need for empirical analyses. Paramount research areas include satisfaction and wellbeing, redevelopment, health and social capital. Critical areas, such as neighbourhood education, livelihood, adaptation, security, asset, and built environment are under studied. Empirically examining these issues and how they inter-link to create and dissolve urban neighbourhoods and spaces, particularly, in developing countries would not only shape and influence policy, but also contribute to current knowledge, in addition to fostering contextual understanding of sustainable, healthy and learning neighbourhoods. This will also be important in bridging the scholarship dichotomy between developed and developing worlds. The complex and intricate nature of these issues will demand that data be generated through multiple sources to allow for contextual analysis and understanding. It is argued that in studying social issues and their complex interactions with structural processes, attention has to be put on data generation through, for instance, surveys, interviews and observations (Mowbray et al. 2007; ONS 2009). This triangulation approach will aid validation of primary data, in addition to enhancing accuracy, consistency and interpretation. Future neighbourhood studies, particularly in the developing world must endeavour to prioritize data generation and curation for contextual analysis.

In relation to methodological approaches, different techniques and approaches have been developed and applied over the past decades, with most studies employing quantitative methods, such as various regression models (e.g., multilevel and Ordinary Least Squares (OLS)), GIS and land-use models, path analysis, among others. Additionally, methods such as case studies, interviews and observations have been widely applied, especially by anthropologists. However, studies combining both qualitative and quantitative methods are few, but with promising outlook, as mixed methods continue to gain traction. Future studies need to critically think about how to effectively combine different research techniques to gather and analyse neighbourhood level data.

This review lays a strong foundation for the SHLC project, especially RTP2. First, given that neighbourhood effects studies on health and education are geographically biased, with most works conducted in the developed countries and relying largely on secondary data analysis, attempt to utilize reliable empirical data from developing countries context to analyse the interconnections between neighbourhood, health and education would be a major

contribution both in theory and in practice. Such analyses would be critical in answering questions 2 and 3 of RTP2, which seek to understand the association between neighbourhood characteristics and residents life chances, including health, education, and livelihood. Thus, the project has great potential in making significant contribution through empirical data generation. A related contribution would be the utility of mixed methods. Studies examining neighbourhood conditions on health and education have overly depended on statistical modelling and inferences, with little effort to unravel the contextual realities. Employing hybrid approaches (e.g., case studies, GIS, interviews, and observations) at various scales in data generation and analysis to understand neighbourhood peculiarities hold great promise in making significant contribution, particularly to questions 1 and 4 of RTP2. Meanwhile, future studies in developing world should endeavour to prioritize neighbourhood effects analysis, as the subfield is understudied in the global south.

Additionally, until now, literature has done little to operationalize neighbourhood resiliency. Current understanding is blurred. SHLC stands a great chance in pioneering this field. Applying and downscaling the resilience framework as a surrogate for sustainability, has potential not only in allowing for the integration of health, education and learning neighbourhoods, but also in empirical operationalization. The only theoretical contribution (Margot 2001) in this area suggested the application of capital approach. Margot argues that the resilience of a neighbourhood is contingent on the stability of the neighbourhood initial equilibrium state. A neighbourhood with abundant social (e.g., social networks, trust) and physical (e.g., park, market) capital stocks, the study argues, cannot be easily distorted in an event of shock, but this cannot be true of a neighbourhood with a scanty capital base, as they can easily be dispossessed. Although novel idea, the proposition is somewhat weak, as the capital base is limited to only two; social and physical. Neighbourhoods need multiple resources in complex combinations to be sustainable and resilient. The framework by Baffoe and Matsuda (2017) provides an extended and better alternative to conceptualize resilience, which can be applied to the neighbourhood level. The authors theorized and empirically tested scenarios under which communities can reduce vulnerability and enhance resilience based on five asset or capital (social, physical, economic, natural and human) endowment. It should be noted that capital and asset are interchangeably used in literature, with economic related studies favouring capital while human geography and development related studies use asset. Although originally applied to study livelihood, the framework is flexible and can easily be adopted and adapted to study any social issue at any scale in any context. Given that policy makers across the globe favour innovative comparable studies that can give quick impression of pressing societal issues, adopting this framework by SHLC will provide an opportunity to operationalize sustainability or resilience at the neighbourhood level, with an additional advantage of allowing for comparison across the case study countries.

## 6 References

- Allen, J. and Cars, G. 2001. Multiculturalism and governing neighbourhoods. *Urban Studies*, 38, 2195–2209.
- Arguello, J. E. M., Grant, R., Oteng-Ababio, M. and Ayele, B. M. 2013. Downgrading - An overlooked reality in African cities: Reflections from an indigenous neighbourhood of Accra, Ghana. *Applied Geography*, 36, 23-30.
- Agyei-Mensah, S. and Owusu, G. 2009. Segregated by neighbourhoods? A portrait of ethnic diversity in the neighbourhoods of the Accra Metropolitan Area, Ghana. *Population, Space and Place*, 16(6), 499-516.
- Aneshensel, C. S. and Sucoff, C. A. 1996. The neighbourhood context of adolescent mental health. *Journal of Health and Social Behaviour*, 37(4),293-310.
- Azhar, Z. I., Shah, S. A., Koon, S. T. M. and Rahim, S. S. S. A. 2018. Neighbourhood influences and its association with the mental health of adolescents in Kuala Lumpur, Malaysia, *Asian Journal of Psychiatry*.
- Adlakha, D., Hipp, J. A., Sallis, J. F. and Brownson, R. C. 2018. Neighbourhood environment Features and Active Commuting in Chennai, India. *International Journal of Environmental Research and Public Health*, 15, 1840.
- Arthurson, K. 2012. *Social Mix and the City: Challenging the Mixed Communities Consensus in Housing and Urban Planning Policies*. CSIRO, Collingwood, VIC
- Aitken, S. C. 2000. Mothers, communities and the scale of difference. *Social and Cultural Geography*, 1, 65 – 82.
- Anderson, M. B. 2017. Neighbourhood, In Richardson, D., Castree, N., Goodchild, M. F., Kobayashi, A., Liu, W. and Marston, R. A. (Eds). *The International Encyclopaedia of Geography*. Wiley.
- Anderson, E. 1990. *Streetwise: Race, class, and change in an urban community*. Chicago: University of Chicago Press.
- Aber, M. and Nieto, M. 2000. Suggestions for the investigation of psychological wellness in the neighbourhood context: Toward a pluralistic neighbourhood theory. In D. Cicchetti, J. Rappaport, I. Sardler and R. Weissberg, (Eds.), *The promotion of wellness in children and adolescents* (pp. 185–219). Washington, D.C.: CWLA Press.
- Agnew, J. A. 1989. The devaluation of place in social science. In J. A. Agnew and J. S. Duncan (eds) *The Power of Place*. Boston, MA: Unwin Hyman, 9 – 29.
- Agnew, J. A. 1987. *Place and Politics*. Boston, MA: Allen and Unwin.
- Ainsworth, J. W. 2002. Why does it take a village? The mediation of neighborhood effects on educational achievement. *Social Forces*, 81(1), 117–152.
- Arcaya, M. C., Tucker-Seeley, R. D., Kim, R., Schnake-Mahl, A., So, M. and Subramanian, S. V. 2016. Research on neighborhood effects on health in the United States: A systematic

review of study characteristics. *Social Science and Medicine* 168, 16-29.  
<http://dx.doi.org/10.1016/j.socscimed.2016.08.047>

Atkinson, R. and Kintrea, K. 2001. Disentangling Area Effects: Evidence from Deprived and Non-deprived Neighbourhoods. *Urban Studies*, 38(12), 2277–2298.

Blokland, T. 2008. Gardening with a little help from your (middle class) friends: bridging social capital across race and class in a mixed neighbourhood', in Blokland, T. and Savage, M. (Eds): *Networked Urbanism: Social Capital in the City*. Ashgate, Aldershot, pp. 147–170.

Blokland, T. 2003. *Urban bonds*. Cambridge: Polity Books.

Bolt, G. and van Kempen, R. 2013. Mixing neighbourhoods: success or failure? *Cities*, 35, 391–396.

Bwalya, J. and Seethal, C. 2016. Neighbourhood context and social cohesion in Southernwood, East London, South Africa. *Urban Studies*, 53(1) 40–56.

Buck, N. 2001. Identifying neighbourhood effects on social exclusion. *Urban Studies*, 38, 2251–2275.

Bernelius, V. and Kauppinen, T. M. 2012. School Outcomes and Neighbourhood Effects: A New Approach Using Data from Finland: In van Ham, M., Manley, D., Bailey, N., Simpson, L. and Maclennan, D. (Eds). *Neighbourhood Effects Research: New Perspective*. p. 225 – 247. Springer

Berkman, L. and Kawachi, I. 2000. *Social Epidemiology*. Oxford University Press, New York.

Baffoe, G. 2019. Understanding the Neighbourhood Concept and Its Evolution: A Review. *Environment and Urbanization ASIA*, 10(2), 393 – 402.

Baffoe, G. and Matsuda, H. (2017). An empirical assessment of rural livelihood assets from gender perspective: Evidence from Ghana. *Sustainability Science*, 12(3):815 - 828.

Baffoe, G. and Mutisya, E. 2015. Social sustainability: A review of indicators and empirical application. *Environmental Management and Sustainable Development*, 4 (2).

Brower, S. 1996, *Good Neighbourhood*. Westport, CT: Preager.

Burawoy, M. 2000. Introduction: Reaching for the Global. In *Global Ethnography: Forces, Connections, and Imaginations in a Postmodern World*, edited by M. Burawoy, J.A. Blum, S. George, Z. Gille, T. Gowan, L. Haney, M. Klawiter, S.H. Lopez, S.O. Riain, and M. Thayer, 1–40. Berkeley: University of California Press.

Bonds, A., Kenny, J. T. and Wolfe, R. N. 2015. Neighbourhood revitalization without the local: race, non-profit governance, and community development. *Urban Geography*, 36(7), 1064-1082

Bjarnesen, J. 2015. The ambivalence of neighbourhood in urban Burkina Faso. *Anthropology Southern Africa*, 38(3-4), 331-343.

Bursik, R. J. and Grasmick, H. F. 1993. *Neighbourhoods and crime: The dimensions of effective community control*. New York: Lexington.

- Butler, T. and Robson, G. 2001. Social capital, gentrification and neighbourhood change in London: A comparison of three south London neighbourhoods. *Urban Studies*, 38, 2145–2162.
- Brand, R. 1972. The spatial organization of residential areas in Accra, Ghana with particular reference to aspects of modernization. *Economic Geography*, 83(1), 284-298.
- Brooks-Gunn, J., Duncan, G. J. and Aber, J. L. (Eds.). 1997a. *Neighbourhood poverty: Volume 1: Context and consequences for children*. New York: Russell Sage Foundation.
- Brooks-Gunn, J., Duncan, G. J. and Aber, J. L. (Eds.). 1997b. *Neighbourhood poverty: Volume 2: Policy implications in studying neighbourhoods*. New York: Russell Sage Foundation
- Brooks-Gunn, J., Guo, G. and Furstenberg, F. F. Jr. 1993. Who drops out and who continues beyond high school? A twenty-year follow-up of black urban youth. *Journal of Research and Adolescence*, 3(3), 271–294.
- Bhonsle, K. D. and Adane, V. S. 2016. Assessing the Play Provisions for Children in Urban Neighbourhoods of India: Case Study Nagpur, Maharashtra. *Buildings*, 6, 31.
- Campbell, E., Henly, J. R., Elliott, D. S. and Irwin, K. 2009. Subjective constructions of neighbourhood boundaries: Lessons from a qualitative study of four neighbourhoods. *Journal of Urban Affairs*, 31(4), 461-490.
- Christian, H., Zubrick, S. R., Foster, S., Giles-Corti, B., Bull, F., Wood, L., Knuiaman, M., Brinkman, S., Houghton, S., Boruff, B., 2015. The influence of the neighbourhood physical environment on early child health and development: A review and call for research. *Health and Place*, 33, 25–36. <http://dx.doi.org/10.1016/j.healthplace.2015.01.005>
- Christian, H., Zubrick, S.R., Foster, S., Giles-Corti, B., Bull, F., Wood, L., et al., 2015. The influence of the neighbourhood physical environment on early child health and development: A review and call for research. *Health and Place*, 33, 25-36.
- Chola, L. and Alaba, O. 2013. Association of Neighbourhood and Individual Social Capital, Neighbourhood Economic Deprivation and Self-Rated Health in South Africa – A Multi-Level Analysis. *PLoS ONE* 8(7), e71085.
- Coen, S. E., Ross, N. A. and Turner, S. 2008. Without tiendas it's a dead neighbourhood: The socio-economic importance of small trade stores in Cochabamba, Bolivia. *Cities*, 25, 327-339.
- Ceccato, V. and Snickars, F. 2000. Adapting GIS Technology to the Needs of Local Planning. *Environment and Planning B Planning and Design* 27(6), 923-937.
- Chen, D. and Lin, Y. 2016. Social identity, perceived urban neighbourhood quality, and physical inactivity: A comparison study of China, Taiwan, and South Korea. *Health and Place*, 41, 1–10.
- Chen, J. and Chen, S. 2015. Mental health effects of perceived living environment and neighbourhood safety in urbanizing China. *Habitat International*, 46, 101-110.

- Cheng, Z. and Wang, H. 2012. Do neighbourhoods have effects on wages? A study of migrant workers in urban China. *Habitat International*, 38, 222-231.
- Chaskin, R. T. 1997. Perspectives on Neighbourhood and Community: A Review of the Literature. *Social Service Review*, 71(4), 521 – 547.
- Coulton, C., Chan, T. and Mikelbank, K. 2011. Finding Place in Community Change Initiatives: Using GIS to Uncover Resident Perceptions of their Neighbourhoods, *Journal of Community Practice*, 19(1), 10-28
- Coulton, C. J., Korbin, J., Chan, T. and Su, M. 2001. Mapping residents' perceptions of neighbourhood boundaries: a methodological note. *American Journal of Community Psychology*, 29(2), 371–383.
- Coulton, C. J., Korbin, J. E., and Su, M. 1996. Measuring neighbourhood context for young children in an urban area. *American Journal of Community Psychology*, 24(1), 5–32.
- Coulton, C. J., Korbin, J. E., Su, M. and Chow, J. 1995. Community level factors and child maltreatment rates. *Child Development*, 66, 1262–1276
- Chitrakar, R. M., Baker, D. C. and Guaralda, M. 2016. Urban growth and development of contemporary neighbourhood public space in Kathmandu Valley, Nepal. *Habitat International*, 53, 30-38.
- Chase-Landsdale, P. L., Gordon, R. A., Brooks-Gunn, J. and Klebanov, P. K. 1997. Neighbourhood and family influences on the intellectual and behavioural competence of preschool and early school-age children. In J. Brooks-Gunn, G. J. Duncan, and J. L. Aber (Eds.), *Neighbourhood poverty: Volume 1: Context and consequences for children* (pp. 79 – 118). New York: Russell Sage Foundation.
- Cheshire, P. 2007. *Are mixed communities the answer to segregation and poverty?* York: Joseph Rowntree Foundation
- Cheng, Z. and Smyth, R. 2015. Crime victimization, neighbourhood safety and happiness in China. *Economic Modelling*, 51, 424–435.
- Cramm, J. M., Moller, V. and Nieboer, A. P. 2011. Individual- and Neighbourhood-Level Indicators of Subjective Well-Being in a Small and Poor Eastern Cape Township: The Effect of Health, Social Capital, Marital Status, and Income. *Social indicators Research*, 105, 581-593.
- Cho, M. and Kim, J. 2016. Coupling urban regeneration with age-friendliness: Neighborhood regeneration in Jangsu Village, Seoul. *Cities*, 58, 107–114.
- Chattopadhyay, P. 2011. The Politics of India's Neighbourhood Policy in South Asia. *South Asian Survey*, 18(1) 93–108.
- Caughy, M. O., Leonard, T., Beron, K. and Murdoch, J. 2013. Defining neighbourhood boundaries in studies of spatial dependence in child behaviour problems. *International Journal of Health Geographics*, 12, 24.



Caughy, M. O. and O'Campo, P. J. 2006. Neighbourhood poverty, social capital, and the cognitive development of African American pre-schoolers. *American Journal of Community Psychology*, 37(1/2), 141–154.

Coker, A., Awokola, O., Olomolaiye, P. and Booth, C. 2008. Challenges of urban housing quality and its associations with neighbourhood environments: Insights and experiences of Ibadan City, Nigeria. *Journal of Environmental Health Research*, 7 (1), 21-30.

Castells, M. 1977. *The Urban Question: A Marxist Approach*. Cambridge, MA: The MIT Press.

Castells, M. 1996. *The Rise of the Network Society*. Blackwell, Oxford

Chen, Y. and Hoy, C. 2011. Explaining migrant's economic vulnerability in urban China. *Asian Population Studies*, 7(2), 123-136. DOI:10.1080/17441730.2011.576816

Dietz, R. D. 2002. The estimation of neighborhood effects in the social sciences: An interdisciplinary approach. *Social Science Research*, 31 (4), 539–575.

Darcy, M., and Gwyther, G. 2011. Recasting research on 'neighbourhood effects': A collaborative, participatory, trans-national approach. In M. van Ham, D. Manley, N. Bailey, L. Simpson, & D. Maclennan (Eds.), *Neighbourhood effects research: New perspectives*. Dordrecht: Springer.

Dierwechter, Y. 2004. Dreams, bricks, and bodies: mapping "neglected spatialities" in African Cape Town. *Environment and Planning A*, 36(6), 959-981.

Durkheim, E. 1964. *The Division of Labor in Society*. New York, NY: The Free Press.

Docherty, I., Goodlad, R. and Paddison, R. 2001. Civic culture, community and citizen participation in contrasting neighbourhoods. *Urban Studies*, 38, 2225–2250.

Downs, R. M. and Stea, D. 1973. Cognitive maps and spatial behaviour: Process and products. In R. M. Downs and D. Stea (Eds.), *Image and environment: Cognitive mapping and spatial behaviour* (pp. 8–26). Chicago: Aldine Transaction.

Diez Roux, A. V. and Mair, C. 2010. Neighbourhoods and health. *Annual New York Academy of Science*, 1186, 125-145. Doi:10.1111/j.1749-6632.2009.05333.x.

Dorling, D., Mitchell, R., Shaw, M., Orford, S. and Smith, G. D. 2000. The ghost of Christmas past: health effects of poverty in London in 1896 and 1991. *BMJ*, 321 (7276), 1547–1551.

van der Pas, S., Ramklass, S., O'Leary, B., Anderson, S., Keating, N. and Cassim, B. 2015. Features of home and neighbourhood and the liveability of older South Africans. *European Journal of Ageing*, 12, 215 – 227. DOI 10.1007/s10433-015-0343-2

Ellen, I. G. and Turner, M. A. 1997. Does neighbourhood matter? Assessing recent evidence, *Housing Policy Debate*, 8(4), 833-866

Ellaway, A., Macintyre, S. and Kearns, A. 2001. Perceptions of Place and Health in Socially Contrasting Neighbourhoods. *Urban Studies*, 38(12), 2299-2316

- Edgington, D. W. 1986. Neighbourhood Committees and Community Service Delivery In China, *Urban Policy and Research*, 4:4, 31-35,
- Elshater, A. 2012. New Urbanism Principles versus Urban Design Dimensions towards Behavior Performance Efficiency in Egyptian Neighbourhood Unit. *Procedia – Social and Behavioural Sciences*, 68, 826-843.
- Elliott, D. S., Menard, S., Rankin, B., Elliott, A., Huizinga, D., AND Wilson, W. J. 2006. *Good kids from bad neighbourhoods: Successful development in social context*. New York: Cambridge University Press.
- Elliott, J. R. and Sims, M. 2001. Ghettos and barrios: The impact of neighbourhood poverty and race on job matching among blacks and Latinos. *Social Problems*, 48, 341–361.
- Escobar, A. 2001. Culture sits in places: Reflections on globalism and subaltern strategies of localization. *Political Geography*, 20, 139–174.
- Ensminger, M. E., Lamkin, R. P. and Jacobson, N. 1996. School leaving: A longitudinal perspective including neighbourhood effects. *Child Development*, 67, 2400–2416.
- Ellen, I. G. and O'Regan, K. 2010. Welcome to the neighbourhood: How can regional science contribute to the study of neighbourhood? *Journal of Regional science*, 50(1), 363-379
- Ellaway, A., Macintyre, S. and Kearns, A. 2001. Perceptions of place and health in socially contrasting neighbourhoods. *Urban Studies*, 38, 2299–2316.
- Elwood, S. and Leitner, H. 2003. Community-based planning and GIS: Aligning neighbourhood organizations with state priorities? *Journal of Urban Affairs*, 25, 2, 139 – 157.
- Filho, A. D. P. C., Sampson, L., Martins, S. S., Yu, S., Huang, Y., He, Y., Lee, S., Hu, C., Zaslavsky, A., Kessler, R. C. and Galea, S. 2017. Neighbourhood characteristics and mental disorders in three Chinese cities: multilevel models from the World Mental Health Surveys. *BMJ Open*, 7:e017679
- Fischer, C. 1984. *The Urban Experience*. New York, NY: Harcourt Brace Jovanovich.
- Fischer, C. S. 1982. *To dwell among friends: Personal networks in town and city*. Chicago: University of Chicago Press.
- Fong, E. and Shibuya, K. 2003. Economic changes in Canadian neighbourhoods. *Population Research and Policy Review*, 22 (2), 147–170.
- Forrest, R. 2009. *Why cares about neighbourhoods?* Open Forum. Blackwell Publishing Limited, United States.
- Forrest, R. and Kearns, A. 2001. Social cohesion, social capital and the neighbourhood. *Urban Studies*, 38, 2125–2143.
- Frieden, T.R. 2010. A framework for public health action: the health impact pyramid. *American Journal of Public Health* 100, 590-595.
- Gotham, K. F. 2003. Toward an understanding of the spatiality of urban poverty: The urban poor as spatial actors. *International Journal of Urban and Regional Research*, 27(3), 723.

- Gephart, M. A. 1997. Neighbourhoods and communities as contexts for development. In J. Brooks-Gunn, G. J. Duncan, & J. L. Aber (Eds.), *Neighbourhood poverty: Contexts and consequences for children* (Vol. I) (pp. 1–43). New York: Russell Sage Foundation.
- Geyer Jr, H. S. 2018. Evaluating Ecological, Subcultural and Political Approaches to Neighbourhood Change and Neighbourhood Poverty, *Housing, Theory and Society*
- Getis, A. 2015. Analytically derived neighbourhoods in a rapidly growing West African city: The case of Accra, Ghana. *Habitat International*, 45, 126-134.
- Guest, A. M. and Lee, B. A. 1984. How urbanites define their neighbourhoods. *Population and Environment*, 7(1), 32–56.
- Garrioch, D. 2001. Sacred Neighbourhoods and Secular Neighbourhoods: Milan and Paris in the Eighteenth Century.' *Journal of Urban History*, 27(4), 405–419.
- Grigsby, W., Baratz, M., Galster, G. and MacLennan, D. 1987. *The dynamics of neighbourhood change and decline*. Oxford: Pergamon.
- Gould, P. and White, R. 1974. *Mental maps*. Harmondsworth, UK: Penguin Books
- van Graan, J. 2016. Multi-sector cooperation in preventing crime: the case of a South African Neighbourhood Watch as an effective crime prevention model, *Police Practice and Research*, 17:2, 136-148
- Gordon, S. L. and Maharaj, B. 2015. Neighbourhood-level social capital and anti-immigrant prejudice in an African context: an individual-level analysis of attitudes towards immigrants in South Africa, *Commonwealth and Comparative Politics*, 53(2), 197-219
- Graham, E., Manle, Y. D., Hiscoc, K. R., Boyle, P. and Doherty, J. 2009. Mixing housing tenures: is it good for social well-being? *Urban Studies*, 46 (1), 139–165.
- Garner, C. L. and Raudenbush, S. W. 1991. Neighbourhood effects on educational attainment: A multilevel analysis. *Sociology of Education*, 64, 251–262.
- Gregory, I. N., Dorling, D. and Southall, H. R. 2001. A century of inequality in England and Wales using standardized geographical units. *Area*, 33(3), 297–311.
- Gershoff, E. T., Pedersen, S. and Aber, J. L. 2009. Creating Neighbourhood Typologies of GIS-Based Data in the Absence of Neighbourhood-Based Sampling: A Factor and Cluster Analytic Strategy, *Journal of Prevention and Intervention in the Community*, 37(1), 35-47,
- Greif, M. J. and Doodoo, F. N. 2015. How community physical, structural, and social stressors relate to mental health in the urban slums of Accra, Ghana. *Health and Place*, 33, 57-66.
- Galster, G. 2002. An economic efficiency analysis of deconcentrating poverty populations. *Journal of Housing Economics*, 11 (4), 303–329.
- Galster, G. C. 2001. On the nature of neighbourhood. *Urban Studies*, 38, 2111– 2124.
- Galster, G. C. 1986. What is neighbourhood? An externality-space approach. *International Journal of Urban and Regional Research*, 10, 243–263.

- Gans, H. J. 1968. Culture and class in the study of poverty: An approach to antipoverty research. In D. P. Moynihan (Ed.), *Understanding poverty: Perspectives from the social sciences* (pp. 229–259). New York: Basic Books.
- Horn, A. 2004. Reflections on the concept and conceptualisation of the urban neighbourhood in societies in transition: the case of Pretoria, South Africa. *Dela*, 21, 329–340.
- Hall, P.. 2002. *Cities of Tomorrow*, 3rd edition. Oxford: Blackwell.
- Hannerz, U. 1980. *Exploring the City: Inquiries toward an Urban Anthropology*. New York: Columbia University Press.
- Hunter, A. 1979. The urban neighbourhood: Its analytical and social contexts. *Urban Affairs Quarterly*, 14, 267–288.
- Hunter, A. 1974. *Symbolic communities: The persistence and change of Chicago's local communities*. Chicago: University of Chicago Press.
- Holloway, G. and Lapar, M. L. 2007. How big is your neighbourhood? spatial implications of market participation among Filipino smallholders. *Journal of Agricultural Economics*, 58(1), 37–60.
- Haeberle, S. H. 1988. People or place: Variations in community leaders' subjective definitions of neighbourhood. *Urban Affairs Quarterly*, 23, 616–634.
- Hallman, H. W. 1984. *Neighbourhoods: Their place in urban life*. Beverly Hills, CA: Sage.
- Holland, S., Burgess, S., Grogan-Kaylor, A. and Delva, J. 2010. Understanding neighbourhoods, communities and environments: new approaches for social work research. *British Journal of Social Work*, 41(4): 689–707. DOI:10.1093/bjsw/bcq123.
- van Ham, M., Manley, D., Bailey, N., Simpson, D, Maclennan, D (eds). 2012. *Neighbourhood Effects research: New Perspectives*. Dordrecht: Springer
- van Ham, M. and Manley, D. 2010. The effect of neighbourhood housing tenure mix on labour market outcomes: A longitudinal investigation of neighbourhood effects. *Journal of Economic Geography*, 10, 257–282.
- Huckzermeyer, M. 2011. *Tenement cities: From the 19th century Berlin to the 21st century Nairobi*. Trenton: Africa World Press.
- Hipp, J. R. 2007. Block, tract, and levels of aggregation: Neighbourhood structure, crime and disorder as a case in point. *American Sociological Review*, 72(5), 659–680.
- Jagarnath, M. and Thambiran, T. 2017. Greenhouse gas emissions profiles of neighbourhoods in Durban, South Africa – an initial investigation. *Environment and Urbanization*, 30 (1), 191-214.
- Konings, P., van Dijk, R. and Foeken, D. 2006. The African Neighbourhood: An Introduction. In *Crisis and Creativity: Exploring the Wealth of the African Neighbourhood*, edited by P. Konings, and D. Foeken, 1–21. Leiden: Brill

- Kyessi, A. G. 2005. Community-based urban water management in fringe neighbourhoods: the case of Dar es Salaam, Tanzania. *Habitat International*, 29, 1 – 25.
- Keller, S. 1968. *The urban neighbourhood: A sociological perspective*. New York: Random House.
- Kearns, A. and Forrest, R. 2000. Social cohesion and multilevel urban governance, *Urban Studies*, 37(5/6), 995-1017.
- Kearns, A. and Parkinson, M. 2001. The significance of neighbourhood. *Urban Studies*, 38, 2103–2110.
- Keith, K. 2007. Policies and Programmes for Disadvantaged Neighbourhoods: Recent English Experience, *Housing Studies*, 22, 2, 261-282, <http://dx.doi.org/10.1080/02673030601132920>
- Kawachi, I. and Subramanian, S. V. 2007. Neighbourhood influences on health. *Journal of Epidemiology and Community Health*, 61, 3-4.
- Kallus, R. and Law-Yon, H. 2000. What is a neighbourhood? The structure and function of an idea. *Environment and Planning B: Planning and Design*, 27, 815–826.
- van Kempen, R. and Wissink, B. 2014. Between places and flows: towards a new agenda for neighbourhood research in an age of mobility, *Geografiska Annaler: Series B, Human Geography*, 96(2), 95-108
- Kim, D. 2008. Blues from the neighbourhood? Neighbourhood characteristics and depression. *Epidemiol. Rev.* 30, 101-117
- Kauppinen, T. M. 2007. Neighbourhood effects in a European city: Secondary education of young people in Helsinki. *Social Science Research*, 36(1), 421–444.
- Kauppinen, T. M. 2004. Asuinalueen ja perhetaustan vaikutukset helsinkilaisnuorten keskiasteen tutkintojen suorittamiseen (The effects of neighbourhood and family background in completing secondary degrees among youth in Helsinki). *Tutkimuksia 6*. Helsinki: City of Helsinki Urban Facts.
- Konadu-Agyemang, K. 2001. *The Political Economy of Housing and Urban Development in Africa: Ghana's Experience from Colonial Times to 1998*. London: Praeger.
- Klijns, B., de Leon, C. F. M., Kiberle, E. U. B. and Smidt, N. 2017. Do social relations buffer the effect of neighborhood deprivation on health related quality of life? Results from the LifeLines Cohort Study. 44, 43–51. <http://dx.doi.org/10.1016/j.healthplace.2017.01.001>
- Klebanov, P. K., Brooks-Gunn, J., McCarton, C. M. and McCormick, M. C. 1998. The contribution of neighbourhood and family income upon developmental test scores over the first three years of life. *Child Development*, 69, 1420–1436.
- le Roux, I. M., le Roux, K., Mbeutu, K., Comulada, W. S., Desmond K. A., and Rotheram-Borus, M. J. 2011. A randomized controlled trial of home visits by neighbourhood mentor mothers to improve children's nutrition in South Africa, *Vulnerable Children and Youth Studies*, 6(2), 91-102

- Lu, T., Zhang, F. and Wu, F. 2018. Place attachment in gated neighbourhoods in China: Evidence from Wenzhou. *Geoforum*, 92, 144–151
- Li, X., Kleinhans, R. and van Ham, M. 2017. Shantytown redevelopment projects: State-led redevelopment of declining neighbourhoods under market transition in Shenyang, China. *Cities*
- Landman, K. 2000. The urban future: Enclosed neighbourhoods? Urban Conference, Johannesburg, South Africa, 10 – 14 July 2000.
- Lemanski, C. 2009. Augmented informality: South Africa's backyard dwellings as a by-product of formal housing policies. *Habitat International*, 33, 472–484.
- Levanthal, T. and Brooks-Gunn, J. 2000. The neighbourhoods they live in: The effects of neighbourhood residence on child and adolescent outcomes. *Psychological Bulletin*, 126(2), 309–337.
- Lewis, O. 1961. *The Children of Sánchez: Autobiography of a Mexican Family*. New York, NY: Random House.
- Lee, B. A., and Campbell, K. E. 1997. Common ground? Urban neighbourhoods as survey respondents see them. *Social Science Quarterly*, 78, 922–936.
- Lupton, R. and Anne, P. 2004. What we know about neighbourhood change: A literature review. CASE Report 27. London, UK: Centre for the Analysis of Social Exclusion, London School of Economics and Political Science.
- te Lintelo, D. J. H., Gupte, J., McGregor, J. A., Lakshman, R. and Jahan, F. 2018. Wellbeing and urban governance: Who fails, survives or thrives in informal settlements in Bangladeshi cities? *Cities*, 72, 391–402. DOI: 10.1016/j.cities.2017.10.002
- Liu, L., Feng, J., Ren, R. and Xiao, L. 2018. Examining the relationship between neighbourhood environment and residential locations of juvenile and adult migrant burglars in China. *Cities*
- Liu, Y., Zhang, F., Liu, Y. and Wu, F. 2017. The effect of neighbourhood social ties on migrants' subjective wellbeing in Chinese cities. *Habitat International*, 66, 86-94
- Liu, Y., Wu, F. and Li, Z. 2017. Changing neighbourhood cohesion under the impact of urban redevelopment: a case study of Guangzhou, China. *Urban Geography*, 38(2), 266-290.
- Liu, J., Li, L., Zhang, Z. and Xu, H. 2016. Associations between physical health and depressive symptoms in Chinese older adults: Do neighbourhood resources matter? *SSM – Population Health* 2, 531–535
- Lee, V. E. 2000. Using hierarchical linear modelling to study social contexts: The case of school effects. *Educational Psychologist*, 35, 125–141.
- Logan, J. R. and Molotch, H. L. 1987. *Urban fortunes: The political economy of place*. Berkeley: University of California Press. Lyon, L. *The Community in urban society*. Philadelphia: Temple University Press.

- Lau, Y. K., Tam, J. M., Fleischer, N. I. and Meza, R. 2018. Neighbourhood deprivation, smoking, and race in South Africa: A cross sectional analysis. *Preventive Medicine Reports*, 11, 202–208
- Landman, K 2000. The urban future: Enclosed neighbourhoods? Urban Futures Conference, Johannesburg, South Africa, 10 – 14 July 2000.
- Mowbray, C. T., Wooley, M. E., Grogan-Kaylor, A., Gant, L. M., Gilster, M. E., Shanks, T. R. W. 2007. Neighborhood research from a spatially oriented strengths perspective. *Journal of Community Psychology*, 35(5),667–680.
- Muller, P. O. 1981. *Contemporary Suburban America*. Englewood Cliffs: Prentice-Hall.
- Manley, D, van Ham, M, Bailey, N. (eds). 2013. *Neighbourhood Effects or Neighbourhood Based Problems: A Policy Context*. Dordrecht: Springer.
- Morrow, V. 1999. Conceptualising social capital in relation to the wellbeing of children and young people: a critical review. *Sociological Review*, 47 (4), 745–765.
- Minh, A., Muhajarine, N., Janus, M., Brownell, M. and Guhn. 2017. A review of neighborhood effects and early child development: How, where, and for whom, do neighborhoods matter? *Health & Place* 46, 155–174.  
<http://dx.doi.org/10.1016/j.healthplace.2017.04.012>
- Meegan, R. and Mitchell, A. 2001. It's not community round here, it's neighbourhood: Neighbourhood change and cohesion in urban regeneration policies. *Urban Studies*, 38, 2167–2194.
- Mowafi, M., Khadr, Z., Bennet, G., Hill, A., Kawachi, I. and Subramanian, S. V. 2012. Is access to neighborhood green space associated with BMI among Egyptians? A multilevel study of Cairo neighbourhoods. *Health and Place*, 18, 385 – 390.
- Mohamed, A. S. 2013. *Towards more sustainable urban forms in the city of Benghazi: A study of urban fragmentation at the neighbourhood level*. Doctoral Thesis, University of Westminster, UK.
- Mair, C., Diez Roux, A.V., Galea, S. 2008. Are neighbourhood characteristics associated with depressive symptoms? A review of evidence. *Journal of Epidemiol. Community Health*, 62, 940-946.
- Mirowsky, J. and Ross, C. E. 2005. Education, learned effectiveness and health. *London Review of Education* 3(3): 205–220.
- Metcalfe, A., Lail, P., Ghali, W. and Sauve, R. 2011. The association between neighbourhoods and adverse birth outcomes: A systematic review and meta-analysis of multi-level studies. *Paediatr. Perinat. Epidemiol.* 25, 236–245
- Marmot, M., Friel, S., Bell, R., Houweling, T. A. J. and Sebastian, T. 2008. Commission on Social Determinants of Health. Closing the gap in a generation: health equity through action on the social determinants of health. *Lancet*, 372, 1661-1669.
- Macintyre, S., Ellaway, A., Cummins, S. 2002. Place effects on health: how can we conceptualise, operationalise and measure them? *Social Science and Medicine*, 55, 125-139.

- Megbolugbe, I. F., Hoek-Smit, M. C. and Linneman, P. D. 1996. Understanding neighbourhood dynamics: A review of the contributions of William G. Grigsby. *Urban Studies*, 13, 1779–1795
- McCann, E. J. 2003. Framing space and time in the city: Urban politics, urban policy, and the politics of scale. *Journal of Urban Affairs*, 25, 159–178.
- McCann, E. J. 2001. Collaborative visioning or urban planning as therapy? The politics of public-private policy making. *Professional Geographer*, 53, 207–218.
- Meen, G., Nygaard, C. and Meen, J. 2013. The causes of long-term neighbourhood change. In Maarten Van Ham, David Manley, Nick Bailey, Ludi Simpson, and Duncan MacLennan (Eds.), *Understanding neighbourhood dynamics: New insights for neighbourhood effects research* (pp. 43–52). Springer: Dordrecht.
- McDool, E. 2017. "Neighbourhood Effects on Educational Attainment: Does Family Background Influence the Relationship?," Working Papers 2017002, The University of Sheffield, Department of Economics.
- Martin, D. 1998, Automatic neighbourhood identification from population surfaces. *Computers, Environment, and Urban Systems*, 22, 107–120.
- Martin, D. G. 2003. Enacting neighbourhood. *Urban Geography*, 24(5), 361–385.
- Murray, M. 2011. *City of extremes. The spatial politics of Johannesburg*. Durham: Duke University Press.
- Murray, M. 2008. *Taming the disorderly city: The spatial landscape of Johannesburg after Apartheid*. Ithaca: Cornell University Press.
- Muyeba, S. and Seekings, J. 2012. Homeownership, Privacy and Neighbourly Relations in Poor Urban Neighbourhoods in Cape Town, South Africa, *South African Review of Sociology*, 43(3), 41-63
- Massey, D. S., Gross, A. B. and Shibuya, K. 1994. Migration, segregation, and the geographic concentration of poverty. *American Sociological Review*, 59 (3), 425–445.
- Miao, J., Wu, X. and Sun, X. 2018. Neighbourhood, social cohesion, and the Elderly's depression in Shanghai, *Social Science and Medicine*, doi: 10.1016/j.socscimed.2018.08.022
- Nyawasha, T. S., Nekhwevha, F. H. and Chipunza, C. 2012. Neighbourhood Social Capital and HIV/AIDS: Assessing Neighbourliness and Social Attachment in Rural South African Villages, *Journal of Social Sciences*, 32(2), 221-229
- Nettles, S. M., Caughy, M. O. and O'Campo, P. J. 2008. School adjustment in the early grades: Toward an integrated model of neighborhood, parental, and child processes. *Review of Educational Research*, 78(1), 3–32.
- Nkurunziza, E. 2006. Neighbourhood formation process: Access to housing land in Kamwokya, Kampala, Uganda. In Konings, and Foeken D. W. J (Eds) *Crisis and creativity. Exploring the wealth of the African neighbourhood*. Pg 89-118.



- Nieuwenhuis, J., Hooimeijer, P and Meeus, W. 2015. Neighbourhood effects on educational attainment of adolescents, buffered by personality and educational commitment. *Social Science Research*, 50, 100–109. <http://dx.doi.org/10.1016/j.ssresearch.2014.11.011>
- Nicotera, N. 2008. Children speak about neighbourhoods: using mixed methods measure the construct neighbourhood. *Journal of Community Psychology*, 36 (3): 333-351
- Oldfield, S. 2004. Urban networks, community organising and race: an analysis of racial integration in a desegregated South African neighbourhood. *Geoforum*, 35, 189- 201.
- Oswald, F., Jopp, D., Rott, C. and Wahl, H. W. 2011. Is aging in place a resource for or risk to life satisfaction? *Gerontologist*, 51(2):238–25.
- O’Hare, W. and Mather, M. 2003. The growing number of kids in severely distressed neighborhoods: Evidence from the 2000 Census. The Annie E. Casey Foundation and the Population Reference Bureau.
- ONS. General Household Survey Overview 2007. Office for National Statistics; 2009. <http://www.statistics.gov.uk/statbase/prep/5756.asp>
- Olowoporoku, O., Salami, A. and Akintifonbo, O. 2017. Assessment of Residents’ Neighbourhood Confidence in an African Traditional City: The Abeokuta Experience. *Economic and Environmental Studies*, 17(4), 757-775
- Owuor, S.O. and Foeken, D. 2006. Surviving in the neighbourhoods of Nakuru town, Kenya. In: P. Konings and D. Foeken (Eds.), *Crisis and Creativity: Exploring the Wealth of the African Neighbourhood*. Leiden: Brill, pp. 22-45.
- Okunola, S. and Amole, D. 2012. Perception of Safety, Social Participation and Vulnerability in an Urban Neighbourhood, Lagos, Nigeria. *Procedia - Social and Behavioural Sciences*, 35, 505 – 513.
- Olson, P. 1982. Urban neighbourhood research: Its development and current focus. *Urban Affairs Quarterly*, 17, 491–518.
- O’campo, P., Wheaton, B., Nisenbaum, R., Glazier, R. H., Dunn, J. R. and Chambers, C. 2015. The Neighbourhood Effects on Health and Well-being (NEHW) study. *Health and Place*, Health, 31, 65–74
- Oakes, J. M., Andrade, K. E., Biyoow, I. M. and Cowan, L. T. 2015. Twenty years of neighbourhood effect research: an assessment. *Current Epidemiological Reports*, 2, 80-87.
- Parry, C. D. H., Morojele, N. K. Saban, A. and Flisher, A. L. 2004. Brief report: Social and neighbourhood correlates of adolescent drunkenness: a pilot study in Cape Town, South Africa. *Journal of Adolescence*, 27, 369–374
- Pickett, K. E. and Pearl, M. 2001. Multilevel analyses of neighbourhood socioeconomic context and health outcomes: a critical review. *Journal Epidemiol Community Health*, 55, 111-122.
- Parsa, A., Nakendo, F., McCluskey, W. J. and Page, M. W. 2011. Impact of formalisation of property rights in informal settlements: Evidence from Dar es Salaam city. *Land Use Policy*, 28, 695–705

- Pellow, D. 2008. *Landlords and lodgers: Socio-spatial organization in an Accra community*. Chicago: Chicago University Press
- Purdue, D. 2001. Neighbourhood governance: Leadership, trust and social capital. *Urban Studies*, 38, 2211–2224.
- Perry, C. 1929. *The Neighbourhood Unit: A Scheme of Arrangement for the Family Life Community*. New York: Regional Plan of New York and its Environs.
- Park, R. E. and Burgess, E. W. 1925. *The city*. Chicago, IL: University of Chicago Press.
- Putnam, R. D. 1993a. Making democracy work; civic traditions in modern Italy. Princeton, NJ: Princeton University Press.
- Putnam, R. D. 1993b. The prosperous community: social capital and economic growth. *American Prospect*, 13, 35 – 42.
- Parks, M. J. 2013. Urban Poverty Traps: Neighbourhoods and Violent Victimization and Offending in Nairobi, Kenya. *Urban Studies*, 5(9), 1812-1832
- Park, R. E., Burgess, E. W. and McKenzie, R. D. (Eds). 1967. *The City*. Chicago, IL: University of Chicago Press.
- Parkes, A., Kearns, A. and Atkinson, R. 2002. What Makes People Dissatisfied with their Neighbourhoods? *Urban Studies*, 39(13), 2413–2438.
- Peck, J. 1995. Moving and shaking: Business elites, state localism and urban privatism. *Progress in Human Geography*, 19, 16 – 46.
- Qian, Z. and Li, H. 2017. Urban morphology and local citizens in China's historic neighbourhoods: A case study of the Stele Forest Neighbourhood in Xi'an. *Cities*, 71, 97–109
- Quan, S. J. 2017. Energy efficient neighbourhood design under residential zoning regulation in Shanghai. *Energy Procedia*, 143, 865-872.
- Raudenbush, S. W. and Bryk, A. S. 2002. *Hierarchical Linear Models: Applications and Data Analysis Methods*. Thousand Oaks, CA: Sage Publications.
- Roux, A, V. D. and Mair, C. 2010. Neighborhoods and health. *Annals of the New York Academy of Sciences*, 1186, 125–145. doi: 10.1111/j.1749-6632.2009.05333.x
- Ramsay, I. F. and Naidoo, R. 2012. Carbon footprints, industrial transparency and community engagement in a South Durban neighbourhood, *South African Geographical Journal*, 94(2), 174-190
- Robertson, D., McIntosh, I. and Smyth, J. 2010. Neighbourhood identity: The path dependency of class and place. *Housing, Theory and Society*, 27(3), 258–273.
- Raco, M. 2000. Assessing community participation in local economic development—Lessons for the new urban policy. *Political Geography*, 19, 573–599.
- Raju, S. 1980. The social meaning of “urban neighbourhood” in India. *Ekistics*, 47(283), 286-289.

- Robinson, A. 2001. Framing Corkerhill: Identity, agency, and injustice. *Environment and Planning D: Society and Space*, 19, 81–101.
- Raco, M. and Flint, J. 2001. Communities, places and institutional relations: Assessing the role of area-based community representation in local governance. *Political Geography*, 20, 585–612.
- Roosa, M. W., Jones, S., Jenn-Yunn, T. and Cree, W. 2003. Prevention science and neighbourhood influences on low-income children's development: Theoretical and methodological issues. *American Journal of Community Psychology*, 31(1/2), 55–73.
- Raushan, R. and Mutharayappa, R. 2014. Neighbourhood development and caste distribution.
- Swisher, R. 2008. Neighbourhoods and youth: How neighbourhood demographics and social processes affect youth outcomes. *Prevention Researcher*, 15(2), 7–11.
- Sedaghatnia, S., Ghahramanpouri, A., Hasanuddin, L. and Sapura, M. 2013. An Evaluation of Residents' Quality of Life through Neighbourhood Satisfaction in Malaysia. *Environmental Management and Sustainable Development* 2(1), 114-125.
- Sellstrom, E. and Bremberg, S. 2006. The significance of neighbourhood context to child and adolescent health and well-being: A systematic review of multilevel studies. *Scandinavian Journal Public Health* 34 (5), 544-554
- Smit, W., de Lannoy, A., Dover, R. V. H., Lambert, E. V., Levitt, N. and Watson, V. 2016. Making unhealthy places: The built environment and non-communicable diseases in Khayelitsha, Cape Town. *Health and Place*, 39, 196–203.
- Stafford, M. and Marmot, M. 2003. Neighbourhood deprivation and health: does it affect us all equally? *International Journal of Epidemiology*, 32, 3, 357–366, <https://doi.org/10.1093/ije/dygo84>
- Swatt, L. M., Varano, S. P., Uchida, C. D. 2012. Fear of Crime, Incivilities and Collective Efficacy in Four Miami Neighbourhoods. *Journal of Criminal Justice*, 41 (1), 1 – 11.
- Stedman, R. C. 2002. Toward a Social Psychology of Place: Predicting Behaviour from Place-Based Cognitions, Attitude, and Identity. *Environment and Behaviour*, 34(5), 561-581.
- Salje, H., Gurley, E. S., Homaira, N., Ram, P. K., Haque, R., Petri, W., Moss, W. J., Luby, S. P., Breyse, P. and Azziz-Baumgartner, E. 2014. Impact of neighbourhood biomass cooking patterns on episodic high indoor particulate matter concentrations in clean fuel homes in Dhaka, Bangladesh. *Indoor Air*, 24(2), 213-220
- Simone, A. 2010. *City life from Jakarta to Dakar. Movements at the crossroads*. New York: Routledge.
- Swilling, M. and Annecke, E. 2006. Building sustainable neighbourhoods in South Africa: learning from the Lynedoch case. *Environment and Urbanization*, 18(2), 315 – 332.
- Stoler, J., Daniels, D., Weeks, J. R., Stow, D. A., Coulter, L. L. and Finch, B. K. 2012. Assessing the utility of satellite imagery with differing spatial resolutions for deriving proxy measures of slum presence in Accra, Ghana. *GIScience and Remote Sensing*, 49(1), 31-52.

- Srinivasan, S., George, V., and Aten, B. 1996, A computer-based tool for defining regions of similar characteristics. *Computers, Environment, and Urban Systems*, 20, 111–137.
- Simmel, G. 1971. *Individuality and Social Forms*. Chicago, IL: University of Chicago Press.
- Subramanian, S. V., Jones, K., and Duncan, C. 2003. Multilevel methods for public health research (Chapter 4). In I. Kawachi, and L. F. Berkman (Eds.), *Neighbourhoods and health*. Oxford University Press.
- Sampson, R. J., Morenoff, J. D. and Gannon-Rowley, T. 2002. Assessing “neighborhood effects”: Social processes and new directions in research. *Annual Review of Sociology*, 28, 443.
- Sampson, R. J., Raudenbush, S. W., and Earls, F. 1997. Neighbourhoods and violent crime: A multilevel study of collective efficacy. *Science*, 277, 918–924.
- Sarwar, M. I., Chowdhury, M. A. T. and Mabbullah, M. 2006. Quality of urban neighbourhood environment: A case study of residents’ perception in Chittagong City, Bangladesh. *Trends in Applied Sciences*, 1 (3), 248-258.
- Suttles, G. D. 1972. *The Social Construction of Communities*. Chicago, IL: University of Chicago Press.
- Schnell, I. and Goldhaber, R. 2001. Tel-Aviv-Jaffa neighbourhoods. *Environment and Behaviour*, 33(6), 765–795.
- Schnell, I., Benjamini, Y. and Pash, D. 2000. Research Note: Neighbourhoods as Territorial Units: The Case of Tel Aviv-Jaffa, *Urban Geography*, 26(1), 84-95
- Saito, K., Said, I. and Shinozaki, M. 2017. Evidence-based neighbourhood greening and concomitant improvement of urban heat environment in the context of a world heritage site - Malacca, Malaysia. *Computers, Environment and Urban Systems*, 64, 356-372.
- van Til, K. 2006. Neighbourhood (re)construction and changing identities in Mauritania; from a small town perspective. In Konings, and Foeken D. W. J (Eds). *Crisis and creativity. Exploring the wealth of the African neighbourhood*. Pg 231-250.
- Talen, E. 1999. Sense of community and neighbourhood form: An assessment of the social doctrine of new urbanism. *Urban Studies*, 36, 1361–1379.
- Tsusaka, T. W., Kajisa, K. and Aoyagi, K. 2012. Neighbourhood Effects on Social Behaviour: The Case of Irrigated and Rainfed Farmers in Bohol, the Philippines. A paper presented at the Agricultural and Applied Economics Association’s (AAEA) Annual Meeting, Seattle, Washington, USA, August 12 – 14, 2012.
- Thomas, W. I. and Thomas, D. S. 1928. *The Child in America: Behaviour Problems and Programs*. Knopf, New York
- Temkin, K. and Rohe, W. 1996. Neighbourhood Change and Urban Policy. *Journal of Planning Education and Research* 15 (3): 159–170.
- Truong, K., Ma, S. 2006. A systematic review of relations between neighbourhoods and mental health. *Journal of Mental Health Policy Econ.* 9, 137–154.

Talen, E. 1999b. Constructing neighbourhoods from bottom up: The case of resident-generated GIS. *Environment and Planning B: Planning and Design*, 26, 533–554. DOI: 10.1068/b260533

Tunstall, R. 2016. Are neighbourhoods dynamic or are they slothful? The limited prevalence and extent of change in neighbourhood socio-economic status, and its implications for regeneration policy, *Urban Geography*, 37(5), 769-784

Tunstal, R. And Power, A. *Swimming against the tide: polarisation or progress on 20 unpopular council estates, 1980-1995*. Joseph Rowntree Foundation, London.

Teitler, J. O. and Weiss, C. C. 2000. Effects of neighbourhood and school environments on transitions to first sexual intercourse. *Sociology of Education*, 73, 112–132.

The Young Foundation, 2010. *How can neighbourhoods be understood and defined?*

Tönnies, F. 1955. *Community and Association (Gemeinschaft and Gesellschaft)*. London, UK: Routledge and Kegan Paul

Uitermark, J. and Bosker, T. 2014. Wither the ‘undivided city’? An assessment of state sponsored gentrification in Amsterdam. *Journal of Economic and Social Geography*, 105(2), 221–230.

UN-Habitat. 2010. *The State of the African cities report: Governance, inequality and urban land markets*. Nairobi: UN-HABITAT.

Veldboer, L., Kle Inhans, R. and Duyvendak, J. W. 2002. The diversified neighbourhood in Western Europe and the United States. *Journal of International Migration and Integration/Revue de l'intégration et de la migration internationale* 3(1), 41–64.

Vaden-Kiernan, M., D'Elio, M. A., O'Brien, R. W., Tarullo, L. B., Zill, N. and Hubbell-McKey, R. 2010. Neighbourhoods as a Developmental Context: A Multilevel Analysis of Neighbourhood Effects on Head Start Families and Children. *American Journal of Community Psychology*, 45,49-67

Wissink, B. and Hazelzet, A. 2012. Social networks in neighbourhood Tokyo. *Urban Studies* 49(7), 1527–1548

Woodredge, J. 2002. Examining the (ir)relevance of aggregation bias for multilevel studies of neighbourhoods and Crime with an example comparing census tracts to official neighbourhoods in Cincinnati. *Criminology*, 40(3), 681-710.

Webber, M. M. 1963. *Order in diversity: Community without propinquity*. In L. Wingo (ed) *Cities and Space*. Baltimore, MD: The Johns Hopkins University Press.

Wu, F. 2010. Gated and packaged suburbia: Packaging and branding Chinese suburban residential development. *Cities*, 27, 385–396. DOI: 10.1016/j.cities.2010.06.003

Wong, Y. L. I. and Hillier, A. E. 2001. Evaluating a community-based homelessness prevention program: A geographic information system approach. *Administration in Social Work*, 25(4), 21–45.

Wilson, W.J. 1996. *When Work Disappears*. Knopf, New York, NY.

- Wilson, W. J. 1987. *The Truly Disadvantaged: The Inner City, The Underclass, and Public Policy*. Chicago, IL: University of Chicago Press.
- Wang, Y. and Shaw, D. 2018. The complexity of high-density neighbourhood development in China: Intensification, deregulation and social sustainability challenges. *Sustainable Cities and Society* 43, 578–586
- Willemse, L. 2013. A Flowmap–geographic information systems approach to determine community neighbourhood park proximity in Cape Town, *South African Geographical Journal*, 95(2), 149-164
- Weeks, J. R., Hill, A. G., Stow, D., Getis, A. and Fugate, D. 2007. Can you spot a neighbourhood from the air? Defining neighbourhood structure in Accra, Ghana. *Geojournal*, 69, 9-22.
- Werthmann, K. 2002. Matan Bariki, ‘Women of the Barracks’ Muslim Hausa Women in an Urban Neighbourhood in Northern Nigeria. *Africa*, 72, 112-130
- Wirth, L. 1938. Urbanism as a Way of life. *American Journal of Sociology*, 44(1), 1–24.
- White, K. J. C. and Guest, A. M. 2003. Community lost or transformed? Urbanization and social ties. *City and Community*, 2, 239–259.
- Wellman, B., and Leighton, B. 1979. Networks, neighbourhoods, and communities: Approaches to the study of the community question. *Urban Affairs Quarterly*, 14, 363–390.
- Westaway, M. S. 2009. Aspects of environmental quality of life that affect neighbourhood satisfaction in disadvantaged and advantaged Johannesburg communities, *Development Southern Africa*, 26(3), 447-458, DOI: 10.1080/03768350903086820
- Wen, M., Fan, J., Jin, L. and Wang, G. 2010. Neighbourhood effects on health among migrants and natives in Shanghai, China. *Health and Place*, 16, 452–460. DOI:10.1016/j.healthplace.2009.12.001
- Wong, D. W. 2001. Desktop and Internet GIS Development for Spatial Segregation Analysis. Paper presented at ESRI User Conference. San Diego, California.
- Wu, J., Ta, N., Lin, J. and Chai, Y. 2018. Urban form breeds neighbourhood vibrancy: A case study using a GPS-based activity survey in suburban Beijing. *Cities*, 74, 100–108. DOI:10.1016/j.cities.2017.11.008
- Yen, I. H. and Kaplan, G. A. 1999. Neighbourhood social environment and risk of death: multilevel evidence from the Alameda county study. *American Journal of Epidemiology*, 149, 898-907.
- Zhao, W. and Zou, Y. 2017. Un-gating the gated community: The spatial restructuring of a resettlement neighbourhood in Nanjing. *Cities*, 62, 78–87. DOI:10.1016/j.cities.2016.12.015
- Zhang, C. and Lu, B. 2015. Residential satisfaction in traditional and redeveloped inner city neighbourhood: A tale of two neighbourhoods in Beijing. *Travel Behaviour and Society*, 5, 23-36. DOI:10.1016/j.tbs.2015.08.001

Zimmerman, E. and Woolf, S. H. 2014. Understanding the relationship between education and health. Institute of Medicine Discussion Paper.

Zhang, C. J. P., Barnett, A., Sit, C. H. P., Lai, P., Johnston, J. M., Lee, R. S. Y. and Cerin, E. 2018. Cross-sectional associations of objectively assessed neighbourhood attributes with depressive symptoms in older adults of an ultra-dense urban environment: the Hong Kong ALECS study. *BMJ Open* 2018; 8:e020480. Doi:10.1136/bmjopen-2017-020480

## 7 Appendix

**Table 1: Summary of neighbourhood studies in developing countries**

| Author               | Study location          | Issue addressed  | Approach     | Discipline                | Techniques                                       | Nature of data       |
|----------------------|-------------------------|--|--------------|---------------------------|--|----------------------|
| Getis 2015           | Accra, Ghana            | Analytical derivation of neighbourhoods using spatial statistics | Quantitative | Geography                 | AMOEBa and LOSH                                  | Census tract data    |
| Parsa et al. 2011    | Dar es Salaam, Tanzania | Property rights in informal settlement                           | Quantitative | Built environment         | Descriptive statistics, case studies             | Survey data          |
| Arguello et al. 2013 | Korle Gono, Ghana       | Downgrading reflections on indigenous neighbourhoods             | Mixed        | Geography                 | survey, interviews, Focus Group Discussion (FGD) | Field data           |
| Weeks et al. 2007    | Slums in Accra          | Defining neighbourhood structure                                 | Quantitative | Geography                 | Combined GIS-remote sensing                      | Census data          |
| Greif and Dadoo 2015 | Accra                   | Community characteristics and mental health in urban slums       | Quantitative | Sociology                 | Multilevel regression                            | Survey data          |
| Chola and Alaba 2013 | South Africa            | Social capital and neighbourhood association                     | Quantitative | Health science            | Deprivation index                                | National survey data |
| Landman 2000         | South Africa            | Enclosed neighbourhoods  | Review       | Building and construction | Review   | Literature           |
| Oldfield 2004        | South Africa            | Racial integration and urban networks                            | Qualitative  | Urban studies             | Interviews                                       | Primary data         |



|                               |  |  |              |                       |   |  |
|-------------------------------|--|--|--------------|-----------------------|---|--|
| Lemanski 2009                 | South Africa                               | Formal housing policies and informal backyard dwellings        | Qualitative  | Geography             | Case study  | Primary data   |
| Smit et al. 2016              | Khayelitsh, South Africa                   | Built environment and non-communicable diseases                | Qualitative  | Urban studies         | Ethnography and literature review                           | Primary and secondary data                           |
| Van der Pas et al. 2015       | Inanda, Ntuzuma and KwaMashu, south Africa | Home features and neighbourhood liveability among older people | Quantitative | Health science        | Regression analysis   | Secondary data                                       |
| Bwalya and Seethal 2016       | Southernwood, South Africa                 | Neighbourhood context and social interaction                   | Qualitative  | Geography             | Interviews and observations                                 | Primary data   |
| Park 2013                     | Nairobi slums                              | Neighbourhoods and violent victimisation                       | Quantitative | Sociology             | Multilevel regression                                       | Secondary data (Nairobi cross sectional Slum Survey) |
| Jagarnath and Thammbiran 2017 | Durban wards, South Africa                 | Greenhouse gas emission inventory at the neighbourhood level   | Quantitative | Environmental science | GIS and descriptive statics                                 | Secondary data from various sources                  |
| Willemse 2013                 | Cape town, South Africa                    | Spatial analysis of neighbourhood park proximity               | Quantitative | Geography             | GIS   | Spatial data   |
| le Roux et al. 2011           | 37 Cape town neighbourhoods                | Impact of neighbourhood home visit mentor mothers              | Quantitative | Health science        | Fixed effect linear regression analysis, Statistical tests, | Survey data  |

|                          |   |  |              |                       |  |                |
|--------------------------|---|--|--------------|-----------------------|--|----------------|
|                          |   | on children's nutrition  |              |                       | including t-test and chi square                            |                |
| Westaway 2009            | Johannesburg communities, South Africa              | Perception on environmental quality  | Mixed        | Environmental health  | Stepwise regression, descriptive statistics                | Survey         |
| Ramsay and Naidoo 2012   | South Durban neighbourhood, south Africa            | Estimation of neighbourhood Carbon footprint   | Quantitative | Environmental science | Descriptive statistics (tables )                           | Secondary data |
| Geyer Jr 2018            | Cape town neighbourhoods                            | Evaluation of ecological, subcultural and political approaches to neighbourhood change and poverty | Quantitative | Geography             | Statistical analysis including factor analysis, regression | Census data    |
| Mayeba and Seekings 2012 | Cape town neighbourhood                             | Homeownership, privacy and neighbourhood relations   | Qualitative  | Sociology             | Semi-structured interviews                                 | Survey data    |
| van Graan 2016           | Roodepoort neighbourhood, south Africa              | Multi-level cooperation and crime prevention   | Qualitative  | Sociology             | Interviews, observations, documents review                 | Survey data    |
| Gordon and Maharaj 2015  | South Africa  | Neighbourhood social capital and anti-immigrant prejudice  | Quantitative | Social science        | Ordered logistic model                                     | Secondary data |
| Nyawasha et al. 2012     | Rural neighbourhoods in Kwazulu-Natal, south Africa | Neighbourhood social capital and HIV/AIDS prevention   | Qualitative  | Sociology             | Interviews   | primary data   |
| Mowafi et al. 2012       | Cairo, Egypt  | Neighbourhood green space and BMI association  | quantitative | Public health         | Multilevel models  | Secondary data |

|                         |                             |  |              |               |                                    |                |
|-------------------------|-----------------------------|--|--------------|---------------|------------------------------------|----------------|
| Parry et al. 2004       | Cape town, south Africa     | Social and neighbourhoods correlates of adolescent drunkenness             | Quantitative | Public health | Statistics                         | Survey data    |
| Lau et al. 2018         | South Africa                | Neighbourhood deprivation  | Quantitative | Public health | Deprivation index, poisson models  | Secondary data |
| Kyessi 2005             | Dar es Salaam               | Fringe neighbourhoods community water management                           | Qualitative  | Planning      | Interviews                         | Primary data   |
| Werthmann 2002          | Kano, Nigeria               | Hausa speaking women in urban neighbourhoods                               | Qualitative  | Sociology     | Interviews                         | Primary data   |
| Okunola and Amole 2012  | Lagos neighbourhoods        | Neighbourhood perception on safety, social participation and vulnerability | Quantitative | Architecture  | Regression analysis, questionnaire | Survey data    |
| Elshater 2012           | Basilica, Egypt             | Behavioural performance efficiency in Egyptian neighbourhoods              | Qualitative  | Planning      | Literature                         | Literature     |
| Van der Pas et al. 2015 | South Africa neighbourhoods | Neighbourhood and home features and liveability among older people         | Quantitative | Public health | Linear regression analysis         | Secondary data |
| Mohamed 2013            | Benghazi, Libya             | Urban fragmentation at the neighbourhood level                             | Qualitative  | Architecture  | Literature                         | Literature     |

|                         |                                     |   |              |                   |                                       |              |
|-------------------------|-------------------------------------|---|--------------|-------------------|---------------------------------------|--------------|
| Olowoporoku et al. 2017 | Abeokuta, Nigeria                   | Neighbourhood confidence and satisfaction                       | Quantitative | Planning          | Questionnaire, statistics             | Primary data |
| Cramm et al. 2011       | Eastern cape township, south Africa | Socioeconomic factors and neighbourhood subjective wellbeing    | Quantitative | Health            | Multilevel regression                 | Survey data  |
| Cooker et al. 2008      | Ibadan, Nigeria                     | Housing quality and associations with neighbourhood environment | Quantitative | Civil engineering | Questionnaire, descriptive statistics | Primary data |
| Horn 2004               | Pretoria, south Africa              | Urban neighbourhood transitions                                 | Qualitative  | Geography         | Interviews                            | Primary data |
| Owuor and Foeken 2006   | Kenya                               | Neighbourhood survival  | Qualitative  | Urban studies     | Interviews                            | Primary      |
| Koning 2006             | Doula                               | Motorbike drivers in New bell neighbourhoods                    | Qualitative  | Urban studies     | Interviews                            | Primary      |
| Nkurunziza 2006         | Kamwokya, Uganda                    | Neighbourhood formation   | Mixed        | Urban studies     | Interviews, FGD                       | Primary data |
| van Til 2006            | Mauritania                          | Neighbourhood reconstruction                                    | Qualitative  | Urban planning    | Case studies                          | Primary data |
| Liu et al 2017          | Guangzhou                           | Neighbourhood social cohesion and urban redevelopment           | Mixed        | Planning          | Path analysis, interviews             | Survey data  |
| Coen et al. 2008        | Cochabamba, Bolivia                 | Importance of neighbourhood stores                              | Qualitative  | Geography         | Case study                            | Primary data |

|                         |                         |  |              |                        |                                    |                |
|-------------------------|-------------------------|--|--------------|------------------------|------------------------------------|----------------|
| Lintel et al. 2018      | Bangladeshi cities      | Wellbeing and governance in informal settlements             | Quantitative | Development studies    | Chi square                         | Survey data    |
| Lu et al. 2018          | Wenzhou, China          | Place attachment in gated neighbourhoods                     | Quantitative | Planning               | Regression analysis, questionnaire | Survey data    |
| Liu et al. 2017         | Guangzhou, china        | neighbourhood social ties and subjective wellbeing           | Quantitative | Planning               | Multilevel analysis                | Survey data    |
| Wu 2010                 | China                   | Packaging and branding of Chinese suburban residential areas | Qualitative  | Planning               | Literature review                  | Literature     |
| Raju 1980               | India                   | Social meaning of neighbourhood                              | Qualitative  | Geography              | Literature review                  | Literature     |
| Sarwar et al. 2006      | Chittagong, Bangladesh  | Residents perceptions on neighbourhood                       | Quantitative | Geography              | Questionnaire, chi square          | Field survey   |
| Chattopadhyay 2011      | India                   | Neighbourhood politics                                       | Qualitative  | Political science      | Literature review                  | Literature     |
| Bhonsle and Adane 2016  | Nagpur, India           | Play provisions in urban neighbourhoods                      | Qualitative  | Architecture           | Case study                         | Survey data    |
| Filho et al. 2017       | Chinese cities          | Neighbourhood characteristics and mental disorders           | Quantitative | Health                 | Multilevel analysis                | Survey data    |
| Chen and Hoy 2011       | Urban china             | Migrants economic vulnerability                              | Mixed        | Urban studies          | Questionnaire, interviews          | Survey data    |
| Holloway and Lapar 2007 | Filipino neighbourhoods | Spatial implication of                                       | Quantitative | Agricultural economics | Bayesian estimation                | Secondary data |

|                               |                    |   |              |                       |                                    |                         |
|-------------------------------|--------------------|---|--------------|-----------------------|------------------------------------|-------------------------|
|                               |                    | market participation                                    |              |                       |                                    |                         |
| Edginton 1986                 | Tianjin, China     | Neighbourhood community and community service delivery  | Qualitative  | Urban planning        | Observation                        | Primary data            |
| Salje et al. 2014             | Dhaka, Bangladesh  | Impact of neighbourhood biomass cooking patterns        | Qualitative  | Public health         | Questionnaire, logit models        | Survey data             |
| Adlakha et al. 2018           | Chennai, India     | Neighbourhood environment correlates                    | Quantitative | Built environment     | Questionnaire, logistic regression | Survey data             |
| Zhang et al. 2018             | Urban china        | Challenges and opportunities for neighbourhood planning | Qualitative  | Real estate           | Interviews,                        | Literature, survey data |
| Tsusaka et al. 2013           | Bohol, Philippines | Neighbourhood effects                                   | Quantitative | Agriculture           | Spatial regression, questionnaire  | Survey data             |
| Raushan and Mutharayappa 2014 | India              | Neighbourhood development and caste distribution        | Quantitative | Social science        | Factor analysis, Statistics        | Secondary data          |
| Saito et al. 2017             | Malacca, Malaysia  | Neighbourhood greening and urban heat improvement       | Quantitative | Urban studies         | Computer simulation                | Field survey            |
| Quan 2017                     | Shangai, china     | Neighbourhood energy efficiency                         | Quantitative | Environmental studies | Computer simulation                |                         |

|                      |   |  |              |                |  |                |
|----------------------|---|--|--------------|----------------|--|----------------|
|                      |   | under residential zoning regulation  |              |                |  |                |
| Wang and Shaw 2018   | Shenzhen, china                                       | High-density neighbourhood development and sustainability challenges         | Qualitative  | Urban studies  | Case study, interviews   | Field data     |
| Liu et al. 2018      | China   | Neighbourhood resources and physical health correlates                       | Quantitative | Social work    | Linear regressions   | Secondary data |
| Azhar et al. 2018    | Kuala Lumpur, Malaysia                                | Neighbourhood influences and mental health correlates                        | Quantitative | Public health  | Questionnaire, deprivation index, statistics including ANOVA, chi square | Survey data    |
| Chen and Chen 2015   | China   | Neighbourhood living environment and mental health correlates                | Quantitative | Social science | Regression analysis  | Secondary data |
| Chen and Lin 2016    | Urban neighbourhoods in china, Taiwan and south Korea | Correlates of social identity, neighbourhood quality and physical inactivity | Quantitative | Health science | Multivariate regression  | Secondary data |
| Chang and Wang 2013  | Urban china   | Neighbourhood environment and wages correlates                               | Quantitative | Economics      | Regression analysis  | Survey data    |
| Cheng and Symth 2015 | China   | Correlates of crime victimization, neighbourhood                             | Quantitative | Economics      | Fixed effects models   | Secondary data |

|                       |                         |   |              |                   |  |                                |
|-----------------------|-------------------------|---|--------------|-------------------|--|--------------------------------|
|                       |                         | safety and happiness  |              |                   |  |                                |
| Chitrakar et al. 2016 | Kathmandu valley, Nepal | Urban growth and contemporary neighbourhood public space                          | Qualitative  | Civil Engineering | Case study, interviews, observations   | Primary data                   |
| Cho and Kim 2016      | Jangsu village, Seoul   | Neighbourhood regeneration  | Qualitative  | Social science    | Interviews, participant observation  | Field data                     |
| Li et al. 2017        | Shenyang, China         | Neighbourhood market transition   | Qualitative  | Architecture      | Interviews, document analysis  | Field data                     |
| Liu et al. 2018       | China                   | Correlates of neighbourhood environment and migrant burglars residential location | Quantitative | Geography         | Descriptive statistics, poisson regression                                       | Combined field and census data |
| Miao et al. 2018      | Shanghai, China         | Neighbourhood, social cohesion and depression correlates                          | Quantitative | Social science    | Socioeconomic status index, structural equation model (SEM), regression analysis | Secondary data                 |
| Qian and Li 2017      | Xi'an, China            | Role of local citizens in historic neighbourhoods                                 | Qualitative  | Planning          | Interviews, observations   | Field data                     |
| Wen et al. 2010       | Shanghai, China         | Neighbourhood effects and health correlates                                       | Quantitative | Sociology         | Regression analysis, Statistics, e.g. t-test and chi square, questionnaire       | Survey data                    |



|                   |                         |  |              |                   |   |                           |
|-------------------|-------------------------|--|--------------|-------------------|---|---------------------------|
| Wu et al. 2018    | Beijing, China          | Neighbourhood vibrancy                 | Quantitative | Planning          | GIS, index  | Field data                |
| Zhang and Lu 2015 | Beijing, china          | Neighbourhood residential satisfaction | Mixed        | Architecture      | Interviews, questionnaire, descriptive statistics | Field data                |
| Zhao and Zou 2017 | Xianlin, Nanjing, China | Neighbourhood spatial restructuring    | Qualitative  | Political science | Document review, observations                     | Literature and field data |

Source: Compiled by the author

**Table 2: Summary of neighbourhood studies in developing countries**

| Author                    | Study location | Issue addressed  | Approach                 | Discipline                 | Techniques                             | Nature of data                    |
|---------------------------|----------------|--|--------------------------|----------------------------|--|-----------------------------------|
| Alen and Cars 2001        | United Kingdom | Neighbourhood governance                                 | Theoretical contribution | Built Environment          | Review                                 | Existing literature               |
| Nieuwenhuis et al. 2015.  | Netherlands    | Neighbourhood effect on education                        | Quantitative             | Urban and Regional Studies | Survival analysis                      | Panel data                        |
| Arcarya et al. 2016       | USA            | Neighbourhood health effects                             | Quantitative             | Health science             | Systematic review                      | Existing literature               |
| Roux and Mair 2010        | USA            | Neighbourhood health effects                             | Qualitative              | Health Science             | Review                                 | Existing literature               |
| Kintrea, K 2006           | United Kingdom | Policies and programmes for disadvantaged neighbourhoods | Qualitative              | Urban Studies              | Review/official literature evaluation  | Literature and official documents |
| Atkinson and Kintrea 2001 | United Kingdom | Area effects in deprived and non-deprived neighbourhoods | Mixed                    | Urban Studies              | Comparative analysis                   | Survey data                       |
| Minh et al. 2017          | Canada         | Neighbourhood effects in early                           | Mixed                    | Population and Health      | Scoping review, descriptive statistics | Literature                        |

|                                 |                |   |                          |                  |   |                     |
|---------------------------------|----------------|---|--------------------------|------------------|---|---------------------|
|                                 |                | child development                                       |                          |                  |   |                     |
| Nieuwenhuis and Hooimeijer 2016 | Netherlands    | Neighbourhood and educational achievement               | Systematic meta-analysis | Regional Studies | Meta-regression analysis                                  | Existing literature |
| O'Campo et al. 2015             | Canada         | Neighbourhood effects on health and wellbeing           | Quantitative             | Health Science   | Multilevel models   | Survey data         |
| Aneshensel and Sucoff 1996      | USA            | Neighbourhood context and mental health                 | Quantitative             | Health science   | Regression analysis                                       | Survey data         |
| Ainsworth 2002                  | USA            | Neighbourhood effects and educational attainment        | Quantitative             | Education        | Regression analysis                                       | Longitudinal data   |
| Bolt and van Kempen 2013        | Netherlands    | Neighbourhood successes and failures                    | Theoretical contribution | Geography        | Review  | Literature          |
| Buck 2001                       | United Kingdom | Neighbourhood effects and social exclusion              | Quantitative             | Social Science   | Regression analysis                                       | Panel data          |
| Bonds et al. 2015               | USA            | Neighbourhood revitalization and governance             | Mixed                    | Geography        | Observations, interviews, surveys, descriptive statistics | Survey data         |
| Butler and Robson 2001          | United Kingdom | Social capital, gentrification and neighbourhood change | Qualitative              | Urban Studies    | Comparative approach                                      | Field data          |
| Campbell et al. 2009            | USA            | Neighbourhood construct                                 | Qualitative              | Social Science   | Interviews  | Survey data         |
| Christian et al. 2015           | Australia      | Neighbourhood physical                                  | Qualitative              | Health Science   | Systematic review   | Existing literature |

|                       |                |   |  |                |                               |                     |
|-----------------------|----------------|---|--|----------------|-------------------------------|---------------------|
|                       |                | environment and child health                                    |  |                |                               |                     |
| Coulton et al. 2011   | USA            | GIS-based residents perception of neighbourhood                 | Mixed: Methodological contribution       | Social Science | GIS, interviews               | Survey data         |
| Coulton et al. 2001   | USA            | Mapping residents perceptions of neighbourhood                  | Mixed: methodological contribution       | Social Science | GIS                           | Survey data         |
| Coulton et al. 1996   | USA            | Neighbourhood context and young children                        | Methodological contribution              | Social Science | Spatial statistics            | Census data         |
| Caughy et al. 2013    | USA            | Neighbourhood effect on child behaviour                         | Quantitative methodological contribution | Health Science | Spatial statistics and models | Observational data  |
| Caughy et al. 2006    | USA            | Neighbourhood poverty, social capital and cognitive development | Quantitative                             | Health Science | Multivariate analysis         | Survey data         |
| Ellen and Turner 1997 | USA            | Neighbourhood effect  | Qualitative                              | Urban Studies  | Review                        | Existing literature |
| Ellaway et al. 2001   | United Kingdom | Neighbourhood and place perceptions and health                  | Mixed                                    | Urban Studies  | Inferential statistics        | Survey data         |
| Elliot and Sims 2001  | USA            | Neighbourhood poverty and race impacts on job matching          | Quantitative                             | Social Science | Regression analysis           | Secondary data      |
| Ensminger et al. 1996 | USA            | Neighbourhood effects and school leaving                        | Quantitative                             | Public health  | Regression analysis           | Census data         |

|                            |                |  |  |                |                                   |                                       |
|----------------------------|----------------|--|--|----------------|-----------------------------------|---------------------------------------|
| Elwood and Leitner 2003    | USA            | Neighbourhood organization and planning          | Quantitative   | Social Science | GIS                               | Field data                            |
| Fong and Shibuya 2003      | Canada         | Neighbourhood economic changes                   | Quantitative   | Social Science | Regression analysis               | Census data                           |
| Forrest and Kearns 2001    | United Kingdom | Neighbourhood social cohesion and capital        | Qualitative: theoretical contribution                    | Urban Studies  | Review                            | Existing literature                   |
| Guest and Lee 1984         | USA            | Neighbourhood definition                         | Quantitative   | Sociology      | Inferential statistics            | Survey data                           |
| Galster 2001               | USA            | Nature of neighbourhood                          | Conceptual and theoretical contribution                  | Urban Studies  | Review                            | Existing literature                   |
| Garrioch 2001              | Australia      | Sacred and secular neighbourhoods                | Theoretical contribution                                 | Urban Studies  | Review                            | Existing literature                   |
| Garner and Raudenbush 1991 | United Kingdom | Neighbourhood effects and educational attainment | Quantitative   | Social Science | Hierarchical linear model         | Mixed; primary survey and census data |
| Gershoff et al. 2009       | USA            | Neighbourhood typologies                         | Quantitative; methodological contribution                | Health Science | Factor analysis                   | Secondary data                        |
| Galster 1986               | USA            | Neighbourhood meaning                            | Methodological contribution (theoretical and conceptual) | Urban studies  | Multivariate probability analysis | Literature                            |
| Hunter 1979                | USA            | Analytical and social contexts of neighbourhoods | Qualitative (theoretical contribution)                   | Sociology      | Review                            | Existing literature                   |
| Haeberle 1988              | USA            | Subjective definitions of neighbourhoods         | Quantitative   | Urban Studies  | Statistics                        | Primary data                          |

|                                |                |  |   |                |                       |                                      |
|--------------------------------|----------------|--|---|----------------|-----------------------|--------------------------------------|
| Holland et al. 2010            | United Kingdom | Neighbourhood environment and wellbeing                      | Mixed                                     | Sociology      | Review                | Existing empirical work              |
| Kearns and Forrest 2000        | United Kingdom | Social cohesion and governance                               | Qualitative                               | Urban Studies  | Review                | Existing literature                  |
| Hipp 2007                      | USA            | Neighbourhood structure and crime                            | Quantitative                              | Sociology      | Multilevel regression | Secondary data: National survey data |
| Kearns and Parkinson 2001      | United Kingdom | Neighbourhood importance                                     | Qualitative; theoretical contribution     | Urban Studies  | Review                | Existing literature                  |
| Kawachi and Subramanian 2007   | USA            | Neighbourhood and health                                     | Qualitative                               | Public Health  | Multilevel analysis   | Literature                           |
| Kallus and Law-Yon 2007        | Israel         | Neighbourhood definition                                     | Conceptual contribution                   | Architecture   | Review                | Existing literature                  |
| Kim 2008                       | USA            | Neighbourhood attributes and depression                      | Qualitative                               | Public Health  | Systematic review     | Existing literature                  |
| Kauppinen 2007                 | Finland        | Neighbourhood effect   | Quantitative                              | Sociology      | Multilevel models     | Secondary data                       |
| Klebanov et al. 1998           | USA            | Neighbourhood and family income impact in developmental test | Quantitative                              | Health Science | Regression analysis   | Survey data                          |
| Levanthal and Brooks-Gunn 2000 | USA            | Neighbourhood effect on child outcome                        | Qualitative                               | Psychology     | Review                | Existing literature                  |
| Lee and Campbell 1997          | USA            | Neighbourhood perception                                     | Quantitative                              | Sociology      | Regression analysis   | Secondary data                       |
| Mowbray et al. 2007            | USA            | Neighbourhood space  | Quantitative: methodological contribution | Social work    | Review                | Secondary data                       |

|                              |                |   |                                       |                 |                              |                     |
|------------------------------|----------------|---|---------------------------------------|-----------------|------------------------------|---------------------|
| Meegan and Mitchell 2001     | United Kingdom | Neighbourhood change and cohesion                     | Qualitative                           | Geography       | Review                       | Secondary materials |
| Martin 1998                  | United Kingdom | Neighbourhood identification                          | Methodological contribution           | Geography       | Surface analysis model       | Census data         |
| Martin 2003                  | USA            | Enacting neighbourhood                                | Theoretical contribution              | Geography       | Review and field data        | Field data          |
| Nettles et al. 2008          | USA            | Neighbourhood and school adjustment                   | Qualitative; theoretical contribution | Education       | Review                       | Existing literature |
| Nicotera 2008                | USA            | Children and neighbourhood                            | Mixed                                 | Social Work     | Principal Component Analysis | Survey and census   |
| O'Campo et al. 2015          | Canada         | Neighbourhood effects and health                      | Quantitative                          | Health Science  | Linear multilevel models     | Survey data         |
| Oakes et al. 2015            | USA            | Neighbourhood effects                                 | Quantitative                          | Health Science  | Review                       | Existing literature |
| Pickett and Pearl 2001       | USA            | Neighbourhood socioeconomic context                   | Quantitative                          | Health Science  | Multilevel analysis          | Literature          |
| Purdue 2001                  | United Kingdom | Neighbourhood governance                              | Qualitative                           | Urban Studies   | Review                       | Literature          |
| Parkes et al. 2003           | United Kingdom | Neighbourhood dissatisfaction                         | Quantitative                          | Urban Studies   | Logistic regression          | Survey data         |
| Robertson et al. 2010        | United Kingdom | Neighbourhood identity                                | Qualitative                           | Social Science  | Documentary review           | Field data          |
| Roosa et al. 2003            | USA            | Neighbourhood effects on low-income children          | Theoretical contribution              | Psychology      | Review                       | Existing literature |
| Sellsstrom and Bremberg 2006 | Sweden         | Neighbourhood context and child and adolescent health | Mixed                                 | Health Sciences | Review                       | Existing literature |

|                           |                |  |                             |                     |                                   |                     |
|---------------------------|----------------|--|-----------------------------|---------------------|-----------------------------------|---------------------|
| Swat et al. 2013          | USA            | Crime, incivilities and collective efficacy    | Quantitative                | Social science      | Structural equation models        | Survey data         |
| Sampson et al. 2002       | USA            | Neighbourhood effects                          | Qualitative                 | Sociology           | Review                            | Existing literature |
| Sampson et al. 1997       | USA            | Neighbourhood and crime                        | Quantitative                | Sociology           | Multilevel analyses               | Survey data         |
| Telen 1999                | USA            | Sense of community and neighbourhood           | Qualitative                 | Development studies | Review                            | Literature          |
| Temkin and Rohe 1996      | USA            | Neighbourhood change                           | Qualitative                 | Planning            | Review                            | Literature          |
| Truong and Ma 2006        | USA            | Neighbourhood and mental health                | Mixed                       | Health Science      | Systematic review                 | Existing literature |
| Talen 1999b               | USA            | Neighbourhood construct                        | Methodological contribution | Development Studies | Review                            | Field data          |
| Tunstall 2016             | United Kingdom | Neighbourhood change and socioeconomic status  | Mixed                       | Urban Studies       | Review                            | Literature          |
| Tietler and Weiss 2000    | USA            | Neighbourhood effects and sexual intercourse   | Quantitative                | Sociology           | Multilevel models                 | Secondary data      |
| Veldboer et al. 2002      | Europe and USA | Neighbourhood diversity                        | Qualitative                 | Planning            | Comparative review                | Literature          |
| Wissink and Hazelzet 2011 | Tokyo          | Neighbourhood and social networks              | Quantitative                | Architecture        | Inferential statistics            | Survey data         |
| Vaden-Kiernan et al. 2010 | USA            | Neighbourhood effects on children and families | Quantitative                | Psychology          | Multilevel analysis               | Census data         |
| Woodredge 2002            | USA            | Neighbourhood and crime                        | Quantitative                | Sociology           | PCA, Hierarchical nonlinear model | Secondary data      |

|                           |                 |  |              |               |                                   |                     |
|---------------------------|-----------------|--|--------------|---------------|-----------------------------------|---------------------|
| Wang and Shaw 2018        | United Kingdom  | High density neighbourhood development                             | Qualitative  | Urban Studies | Interviews and observations       | Field data          |
| Wellman and Leighton 1979 | Canada          | Neighbourhood networks   | Qualitative  | Urban Studies | Review                            | Existing literature |
| Yen and Kaplan 1999       | USA             | Neighbourhood social environment and risk of death                 | Quantitative | Public Health | Multilevel analysis               | Secondary data      |
| Christian et al. 2015     | Australia       | Neighbourhood physical environment on child health and development | Qualitative  | Public Health | Review                            | Existing literature |
| Minh et al. 2017          | Canada          | Neighbourhood effects and child development                        | Qualitative  | Public health | Review                            | Literature          |
| Klijs et al. 2017         | The Netherlands | Neighbourhood deprivation and social relations                     | Quantitative | Public Health | Linear regression models          | Survey data         |
| Stafford and Marmot 2002  | United Kingdom  | Neighbourhood deprivation  | Quantitative | Public Health | Regression analysis               | Longitudinal data   |
| McDool 2017               | United Kingdom  | Neighbourhood effects and educational attainment                   | Quantitative | Economics     | Propensity score matching methods | Longitudinal survey |

Note: This list is not exhaustive. It is limited only to articles. Books and reports are excluded.





# SHLC

Centre for Sustainable,  
Healthy and Learning Cities  
and Neighbourhoods

This report is published by the GCRF Centre for Sustainable, Healthy and Learning Cities and Neighbourhoods (SHLC). The contents and opinions expressed in this paper are those of the authors only.

## About us

SHLC is funded via UK Research and Innovation as part of the Global Challenges Research Fund.

SHLC aims to strengthen capacity to address urban, health and education challenges in fast growing cities across Africa and Asia. SHLC is an international consortium of nine research partners, as follows: University of Glasgow, Human Sciences Research Council, Khulna University, Nankai University, National Institute of Urban Affairs, University of the Philippines Diliman, University of Rwanda and the University of Witwatersrand.

## Get in touch

**GCRF Centre for Sustainable, Healthy and Learning Cities and Neighbourhoods (SHLC)**

University of Glasgow, Rm 710, Adam Smith Building, Glasgow G12 8RS

✉ [shlc-info@glasgow.ac.uk](mailto:shlc-info@glasgow.ac.uk)

🐦 [@shlc\\_cities](https://twitter.com/shlc_cities)

🌐 [www.centreforsustainablecities.ac.uk](http://www.centreforsustainablecities.ac.uk)

Sign up to our newsletter

[www.bit.ly/SHLCnews](http://www.bit.ly/SHLCnews)