

University of Nebraska - Lincoln
DigitalCommons@University of Nebraska - Lincoln

Library Philosophy and Practice (e-journal)

Libraries at University of Nebraska-Lincoln

7-11-2019

Domain Analysis of 'Urban' in Library Classification Schemes

B Preedip Balaji

Indian Institute for Human Settlements, pbalaji@ihs.ac.in

Follow this and additional works at: <https://digitalcommons.unl.edu/libphilprac>



Part of the [Library and Information Science Commons](#), and the [Urban Studies and Planning Commons](#)

Balaji, B Preedip, "Domain Analysis of 'Urban' in Library Classification Schemes" (2019). *Library Philosophy and Practice (e-journal)*. 2814.

<https://digitalcommons.unl.edu/libphilprac/2814>

Domain Analysis of ‘Urban’ in Library Classification Schemes

Abstract

Urban is a complex domain, dealing with characteristics of life in cities to meet the needs of urban society. With a changing demography, spatial and socio-economic conditions, urbanization is experienced in the globalized cities, as half of the world’s population live in large cities and towns in 21st century. There are ongoing debates on positing ‘urban’ in social science, science and technology and in arts disciplines, which interpret and define the meaning of ‘urban.’ However, the existing disciplines are interdisciplinary, intersectional and diversified with various approaches, models and theories to study urbanism. Towards the goal of arriving at the subject treatment of urban, this paper analyzes the domain of urban studies through Library of Congress (LC), Dewey Decimal Classification (DDC) and Universal Decimal Classification (UDC) schemes. Through this analysis, we investigate the key disciplines, vocabularies, and diversity of subjects in urban studies.

Keywords: domain analysis; urban studies; classification schemes; urbanization; LC; UDC; DDC.

To be of the urbs, to be urbane, is to be political and to be civilized.¹

Introduction

Urban represents a way of life, having characteristics of a city or town with indicators of development, denoting diffusion of urban culture and the evolution of urban society. Settlements of human had grown along civilizations, which led to urban form in the past few centuries, fostering urban empires, nation-states, trade and nationalism across borders and through dominant mercantile cities of Europe and colonial cities in Asia (Steinbacher & Benson, 1997; Bounds, 2004). Urbanization shifted people from rural to urban areas in late 18th century through early 19th century in European societies and in the countries birthed by European emigration, primarily the Western society (Australia, United States, Canada and New Zealand) and diffused to Latin America, Asia and Africa. The rise of urban development is intertwined with development of capitalist economy, industrialization and formation of industrial cities (Boyle, 2015). Human settlements and urban community growth gave rise to town planning principles, established public health systems, transformed social structures, and developed urban communities of cities, spaces and regions in their forms, processes and functions (Johnson, 2006).

Rapid population growth in the 20th century, depleting natural resources, effects of human beings on nature, biodiversity loss and changing climate have led to rethink the ways cities are

¹<https://en.oxforddictionaries.com/definition/urbs>

governed for sustainability. Changing urban scenes, urban patterns, cross-culture of cities and suburbs around the world are distinct for their commercial, residential, spatial features (Abrahamson, 2004; Palen, 2018) and remain challenging for policymaking as they differ in studying their ‘ideologies, research methods, theoretical orientations, academic disciplines, and/or levels of analysis’ (Philips, 2009). Cities became revolution for economic prosperity and wealth creation. However, they are equally going through crisis of resources, affordable housing, governance amidst growing poverty and inequality (Weaver, 2017; Florida, 2018). The 21st century planetary urbanization and globalized cities calls for critical new urban theory, which is for humanistic, sustainable urban development. Globally many nations, city governments, nonprofits and international organizations played a key role to discuss the persisting urban challenges through policy dialogues and action plans, besides educators and practitioners. UN Habitat I, II, III conferences and adapting Sustainable Development Goals (specifically Goal 11 for Human Settlements and New Urban Agenda) were significant to reconsider urban systems important for building inclusive, safe and sustainable urban communities (UN Habitat, 2016; United Nations, 2017; United Nations, 2018).

Urban studies involve studying the history of urbanization processes, definition of urban areas and their classification, patterns of urbanization, settlements systems, city and regional scales, rural-urban linkages and the urban policy, trends and socio-economic aspects of cities (Ramachandran, 1992; Sivaramakrishnan, Kundu and Singh, 2005). Parker’s interpretation of urban theory consists of ‘the four Cs’ of urban experience—Culture, Consumption, Conflict and Community (2015, p. 4). Subsuming urbanization (spatiality, scale of the cities) and urbanism (social change and mobility), urban studies do not have its own “academic discipline” status in some respects, however, “is an intellectually coherent, distinctively structured, and promising field of inquiry steered by complex, ever-changing, and often large-scale realities and real-world problems of evolving human settlements (Bowen, Dunn and Kasdan, 2010, p. 199).” Urban studies is

the umbrella for several disciplines engaged in studies of the city, including sociology, geography, economics, political science, anthropology, urban planning, architecture, and urban design. Practitioners of these linked disciplines study urbanization and issues surrounding metropolitan dynamics, the process that links cities with the wide economy, governance, and their spatial structure and change expressed in physical, economic, social, and cultural dimensions. These disciplines use distinctive epistemologies in understanding the city, but the issues they address typically cut across disciplines (Green and Kurban, 2008).

This study investigate the domain of urban studies encompassing its concepts, foundations and theories in an interdisciplinary approach. Adapted from Bates and Maack (2009), for example, urban studies constitute: 1. General fields: e.g. Urbanization 2. Disciplinary specialities: e.g. Planning, Geography, Sociology 3. Cognate disciplines: e.g. Epistemology, Ontology. Through historic, social, economic, political, legal, ideological and environmental factors, urban as a method of research or doing urban research has gained traction (Levy, 2017). Urban theories are evolving, with their interdisciplinary approaches, essentially during different periods by various thinkers of space, place and geography through methodological and empirical research methods, which in the process generated various theories that co-exist, making the contemporary urban

studies and planning heterogeneous (Koch & Latham, 2017). Henry Lefebvre's *The Production of Space*, Louis Wirth's *Urbanism as a Way of Life* are few seminal examples, but also Weber, Durkheim, Marx and Engels examined the urban question in their analyses of capitalism (Saunders, 1986).

Urban contexts vary differently and though some core disciplines and subfields are common, their relations between the subfields vary across countries and regions. There are debates and claims against situating theories of city in social, political, economic, historical, geographical, environmental and cultural contexts. According to Paddison (2001, p. 5-6) some of the major approaches, which looked at studying cities are: spatial/economic of locational analysis and spatial networks; sociological of socio-cultural, socio-political community and community-urban power studies, Neo-Marxist, urban planning/reconstruction/policy-making and postmodern. Cities in globalization played a major role, where urban form manifested as megalopolis, global city-region, mega city-region, metropolitan regions, megaregions to planetary urbanization (Harrison & Hoyer, 2015). Bounds (2004) categorized the social theory of city as—classical, Chicago School, symbolic interactionism, critical theory—ideology and knowledge of Frankfurt School, contemporary Marxism and political economy, contemporary social theory and postmodern urbanism, which collectively shaped studying urban theories. Less known, increasingly challenged and questioning popular canonical assumptions of social theories of urban are southern theory from the global South in a variety of settings (Connell, 2014; Bhan, 2019).

Urban studies in its interdisciplinarity sought coherence between different forms of knowledge, produced by different disciplines. Cities are objects pertaining to many realities, as a microcosm of society and as an expression of modern life:

as a result, numerous disciplines have focused on the city as an object of study: for example, anthropology, architecture, economics, engineering, history, geography, (environmental) psychology, semiology, (urban) sociology, political science, philosophy, as well as literature, poetry and music (Ramadier, 2004, p. 435).

Half of the global population is living in urban areas for the first time in human history and hence led to global critical inquiries on how our towns and cities are studied today (UN-DESA, 2018). While some may be self-contained or coherent but most tend to overlap or draw from other disciplines (e.g. Cities and climate change, City politics, Urban leadership, Cities and towns in literature and Urban economics). We found that contemporary discourses in urban context cover anything that is experienced or conceived in urban studies, the conceptual boundaries never designates one imaginary line as urban studies and all the others are something else, as there is no clear boundaries that defines urban studies as a property of a single academic discipline. For example, it is difficult to differentiate what constitutes urban geography from human geography and so is urban sociology from general social theory (Harding & Blokland, 2014, p. 1). Here, domain analysis helps to draw, map and incorporate key components from various theories in urban studies. In mapping those urban concepts at the intersection of domain analysis and knowledge organization systems, this helps to enhance the understanding of 'urban' with each contributing to the other component. Knowledge organization systems play a crucial

role in identification of core concepts, as essential building blocks for development of domain ontologies (Smiraglia, 2015; Zolyomi and Tennis, 2017). An example of how urban is treated in geography and social sciences is exhibited in Figure 1, organized at the Directory of Open Access Journals (DOAJ)² website.

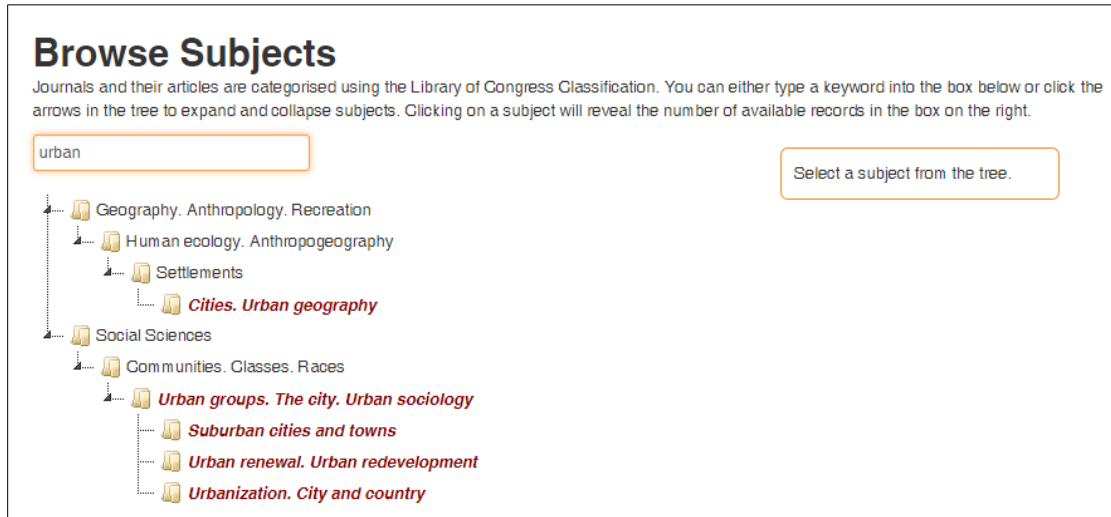


Figure 1. ‘Urban’ in geography versus social sciences (Source: DOAJ).

Building on new scientific methods in the domain discourses of urban, cities needs science to build resilient societies, drive smart governance and enable citizen participation (Townsend, 2015). Calling for a global urban science, the Expert Panel’s report titled ‘*Science and the Future of Cities*’ recommended that cities need multidisciplinary knowledge cross-cutting various domains, that will bridge the gaps in building an inclusive, universal science for urban studies, as

urban systems are increasingly complex and multi-dimensional, and without a more synthetic and holistic enquiry, we run the risk of creating incomplete solutions. In order for ‘urban science’ to be collectively greater than the sum of its parts it needs to draw from all the sciences —natural, engineering, and social, as well as the arts and humanities — whilst linking directly into practice, and offering effective global assessments of the state of our planet’s urban condition (Acuto et al., 2018, p. 2).

Here is an example to demonstrate this through subject categories of urban. For the book titled: *Urban living labs: Experimenting with city futures*³ and the *Contemporary urban planning*⁴ the assigned disciplines by publisher Routledge are:

>>Urban Studies Cities & Infrastructure (Urban Studies)	>>Built Environment Planning City and Urban Planning
>>Environment and Sustainability Environment & the City	>>Geography

² <https://doaj.org/subjects>

³ <https://www.routledge.com/product/isbn/9781138714779?source=igodigital>

⁴ <https://www.routledge.com/Contemporary-Urban-Planning-11th-Edition/Levy/p/book/9781138666382>

>> Built Environment Planning Planning and Sustainability	Human Geography Planning - Human Geography Urban Geography
>> Geography Human Geography Urban Geography	>>>Politics & International Relations Public Administration & Management Government Urban Politics
>> Social Sciences Sociology & Social Policy Urban Sociology	>>>Economics, Finance, Business & Industry Business, Management and Accounting Public & Nonprofit Management Public Management
	>>>Urban Studies Urban Politics

Table 1. Major disciplinary categories of urban studies.

Definitions

Urbanus (Urbs meaning city) is a Latin word of origin, with a meaning of ‘relating to or characteristic of a town or city.’⁵ *Urbane*, *urbanity* and *cityness* are few keywords, which capture the aboutness of city life. Defining cities has been indistinct in urban theory, even if it is rudimentary (Saunders, 1986). As a set of interrelated concepts (e.g. Urban planning), urban settings and activities are contentious to define, as they are complex and interconnected (Levy, 2017). Urban as an unit of study and the bias therein to define it differs, depending upon the discipline it sides with and the variables it measure. Using demography (many people living closely), function (urban centers are the settings for activities and institutions known as “urban functions”) and regions (urbanism is an attribute of regions and societies, not limited to sites, settlements, and states, but integrates a diversity of settlements, for political, economic and religious reasons) is one example (Smith, 2008).

Urban studies do not have any shared definitions, though its study of domains and subfields are highly specialized, yet fragmented in their applications, study, research and practice. Urban in general terms difficult to define, contrasting with it anything and therefore cannot help in isolating as a field of study. A more relaxed view is that there are theories on one hand and urban areas on the other and that urban theory is the first applied to or deduced from aspects of the second. This does not mean important things cannot be said about specific processes in particular cities (Savage, Warde & Ward, 2003, p. 2).

Theories that concern themselves with general social processes are applied - by the original theorists are others - to (or within) towns and cities. In the alternative, theories grow out of specific and consciously chosen urban observations and that the decision not to impose a tighter, limiting definition on the urban means the range of issues that might be covered by the urban theory is huge. The fields expands every time there is a novel meeting between theory and urban

⁵ <https://en.oxforddictionaries.com/definition/urban>

phenomena and there are no conceptual boundaries other than those that theorists as a group effectively choose, through their work to accept (Harding and Blokland, 2014, p. 19-20).

Urban theory is a subset of social theory, but for all the shared conceptual vocabulary that social theory and urban theory possess, the latter is distinguished by its conviction that social, cultural, economic and political life is different in the city, compared with other types of societies (Parker, 2015, p. 4). Brenner uses cityness or the urban dealing with a:

‘concrete abstraction’ in which the contradictory socio-spatial relations of capitalism, commodification, capital circulation, capital accumulation and associated process of political regulation/contestation are at once territorialized, embedded within concrete contexts and thus fragmented and generalized, extended across place, territory and scale and thus universalized (2013, p. 95).

Cities and urbanism became the theme of research in several disciplines and increasingly represented in the urban studies field (Vis, 2018). Paddison argued that:

urban analysis has become a multifaceted, eclectic body of knowledge embracing a wide range of disciplines ... and urban studies has fuzzy boundaries and lacks any unified consensus as to its definition. Even the definition of what constitutes a city is itself contested.” As much as study of cities became specialized yet they are fragmented, hence there is a need for a holistic appreciation of the city (2001, p. x).

Definition of ‘urban’ vary country to country, as international comparability of urban and rural distributions are fuzzy (United Nations, 2008). According to Harding and Blokland (2014, p. 19) urban theory is “a body of ideas explaining one or more aspects of reality within, or of towns and cities.” Urban studies are about how cities and urban spaces are organized, used and negotiated through their processes, functions and forms across cultures, crosscutting globalized cities, through their social, cultural, economic and political perspectives, employing various concepts, theories and methods of study. Here Vis offers a definition of city based on social practice:

a city is a contiguous locus positioned in the physical landscape, which has been developed for human inhabitation through social environmental interaction, and is resided in to such extent that for a predominant number of the population there is no unavoidable need to leave its confines. All of everyday life’s necessities can be met through social relations, either directly or indirectly (i.e. using relations to agents and (resource) locations external to the contiguous locus’ confines), which can be found within its confines. The interactions of everyday life, in turn, are constitutive of, accommodated by and mediated by the environment. (2018, p. 25)

There is no doubt that increasing planetary urbanization is shaping the modern life (Brenner, 2014). What is a city? How do we define it? What determines the urban reality as the interconnected metropolitan areas, mid-sized cities and towns evolve? Defining them become crucial as increasingly there are geographical areas that do not clearly fit inside or outside such a classification (Brezzi, 2012). With significant advances we made in defining urban areas, various settlements patterns strive to define to what extent urbanized we are (Gottdiener and Budd, 2015). For example in India, the official distribution of settlements are based on population, density and labour conditions, however, what is an urban area and how to recognize an urban settlement in India remains unclear. Further, the census definition of “urban” are: 1. Settlements

with a recognized urban local governing body 2. Settlements satisfying the following three conditions: a. Population greater than 5,000 persons b. Population density greater than 400 persons per square kilometer c. At least 75% of male main workers involved in non-agricultural pursuits (Jana, Sami and Seddon, 2014; Joshi and Pradhan, 2018). Accurate definitions of urban regions are crucial to drive socio-economic policies of the countries and development programmes and using scenarios to explore urban futures (Tandel, Hiranandani and Kapoor, 2019; Townsend, 2015). See Figure 2 to understand the semantic relationships of urban areas defined in AGROVOC Multilingual Thesaurus.⁶

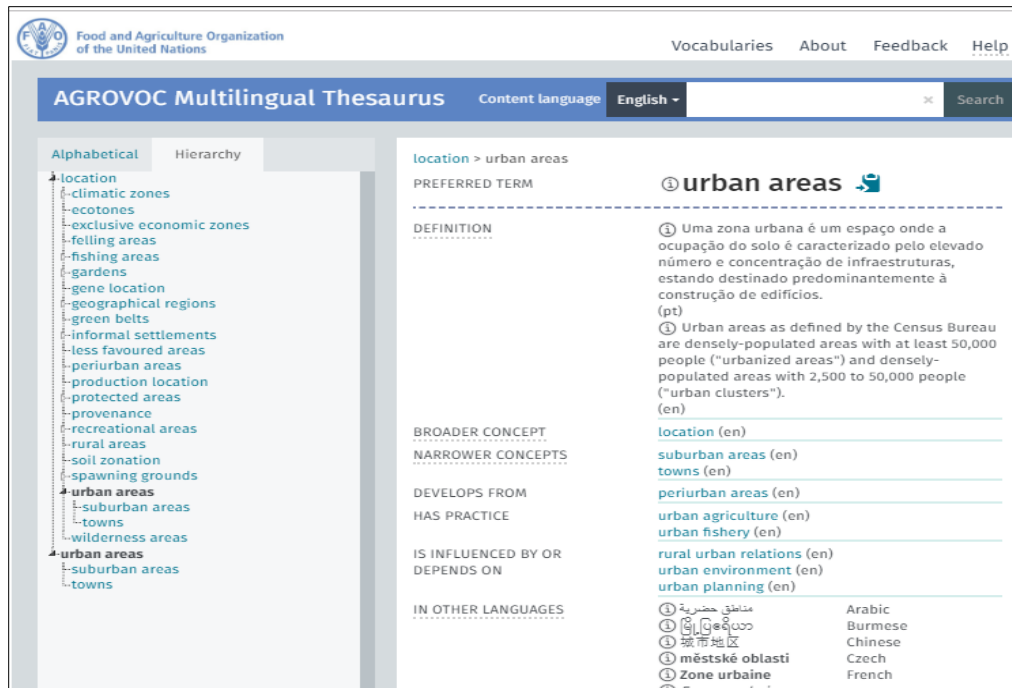


Figure 2. Semantic relationships for “Urban areas” in AGROVOC Thesaurus

Do the urban regions need more attention of policy makers at local, regional, subnational and nation level to make them better places for governance? Cities significantly contribute to the growth of states and for economic development, delivery of social and environmental goals and in improving quality of living. However, existing knowledge structures and their interdisciplinarity is fuzzy and covers a broad canvas not as a single academic discipline. In the light of this, organizing a complex, ever-changing and expanding nature of urbanism concepts is an arduous and intellectual task. Across disciplines, the urban scholarship draw various tools to define the urban complexity – through comparative urbanism, social network analysis, and data visualization tools (Harrison & Hoyler, 2018).

Urban as a concentrated, agglomeration of densely populated place of people, buildings and infrastructures differ in their treatment of disciplinary perspective. As urban problems grow, they got public attention, governmental action and policy support; urban education and graduate programs were established, broadening the characteristics of urban issues, helping to deepen the

⁶ <http://aims.fao.org/standards/agrovoc/functionalities/search>

urban approaches, creating specializations, spatial-environmental implications, socio-economic policy planning and analytic-methodological perspectives, within urban studies field (Rodwin, 1973).

Space, state, territoriality, location and periphery have examined cityness in variety of ways. For Simone (2010) the five facets of periphery of urban life are mobility, hierarchy of urban functions and capacities, popular working-class, collective urban experiences, and urban peripheries (p. 44-51). Urban planning generally includes urban design, urban renewal and community development, transportation planning, economic development planning, growth management, smart growth, sustainable development, planning for disasters, environmental and energy planning, planning for metropolitan regions, patterns of growth, urbanization, housing and regional economics. Moreover, urban development analyzes reurbanization, affordable housing, transport planning, policy and technology, standards for green buildings (Levy, 2017).

Urban history deals with space and social identity, power and governance, the built environment, culture and modernity, and transnational networks (Ewen, 2016). In order to understand what disciplines constitute urban scholarship, in a survey of internal structure and scholarship in the urban studies, Bowen, Dunn and Kasdan (2010) analyzed the textbooks of urban studies and programs in the USA. They found the following key disciplines through urban education, research and practice: Urban Sociology, Urban Governance, Politics and Administration, Urban Economics, Urban Geography, Urban Planning, Design & Architecture Environmental Studies, Housing & Neighbourhood Development. These disciplines have a large degree of confusion between subfields and considerably vary in terms of concreteness versus abstraction, people versus place orientation, and locus of control with overlaps. For example, the indistinguishable Housing and Neighbourhood Development could be contained with the Urban Planning, Design and Architecture, whereas Environmental Studies remains highly distinct from the other subfields. In their critique of Bowen et al (2010) study, arguing for history in urban studies, Harris and Smith (2011) examined the role of urban history in shaping the urban studies. Moreover, urban restructuring in the early 21st century, calls for critical urban theories, given that urbanization needs to be studied more systematically and comprehensively for its far-reaching transformations and interdisciplinarity (Brenner, 2009; Reese, 2014; Hall and Burdett, 2018). See Figure 3 at US National Agricultural Library for the thesaurus definition of urban areas.⁷

Objectives of the Study

1. What is the subject treatment of ‘urban’ in library classification schemes – Library of Congress Classification, Dewey Decimal Classification and Universal Decimal Classification?
2. What are the key disciplines that constitute urban scholarship?
3. How do the thematic areas of urban manifest in organizing urban studies domain?

⁷ <https://agclass.nal.usda.gov/mtwdk.exe?k=default&l=60&w=26408&n=1&s=5&t=2>

The screenshot displays the National Agricultural Library's Thesaurus and Glossary interface. At the top, it features the logos for the USDA (United States Department of Agriculture, National Agricultural Library) and the Inter-American Institute for Cooperation on Agriculture (IICA). Below the logos is a navigation bar with links for Home, About Thesaurus and Glossary, Download Files, Help, Contact Us, and En Español. A breadcrumb trail indicates the current location: Home / Search Thesaurus / Search Results.

The main content area is divided into several sections:

- Search for Term:** A search box with a 'Search' button and a 'Search options' sidebar. The sidebar includes a 'Language' dropdown set to 'English', a 'Search type' dropdown set to 'terms contain text', and a 'Terms per page' dropdown set to '100'.
- Navigation:** A horizontal bar with letters A-Z and a 'Categories' link.
- Term Entry:** The term 'urban areas' is displayed. Below it, the 'Subject Category' is 'P Natural Resources, Earth and Environmental Sciences'. The 'RDF/XML Format' is 'http://lod.nal.usda.gov/nalt/26402.rdf'. The 'Persistent URI' is 'http://lod.nal.usda.gov/nalt/26402'.
- Used For:** A list of related terms: 'urban neighborhoods', 'urban neighbourhods', and 'urban regions'.
- Broader Term:** 'land resources'.
- Narrower Term:** 'heat island', 'metropolitan areas', and 'urban cool island'.
- Related Term:** 'cities', 'hinterland', 'rural areas', 'urban agriculture', 'urban horticulture', 'urban parks', 'urban recreation', and 'urban society'.
- Spanish:** 'áreas urbanas'.
- Term Number:** '26402'.
- Change Display:** A sidebar with options: 'Show Hierarchy', 'Narrower Terms' (indicated by a dot), and 'Broader Terms' (indicated by a colon).
- Search your Term in:** A sidebar with options: 'Google Scholar', 'AGRICOLA Articles', 'AGRICOLA Books', and 'Navigator (USDA only)'.

Figure 3. Mapping 'urban areas' in the National Agricultural Library's Thesaurus and Glossary

Methodology

This study used the following three library classification schemes to identify the urban concepts covered in different main classes, subclasses and common auxiliaries in-depth in:

1. Library of Congress Classification, Online 2018 Edition (The Library of Congress, 2018).
2. Dewey Decimal Classification, 23 Edition (Dewey, Mitchell, Beall, Green, Martin, & Panzer, 2011).
3. Universal Decimal Classification, 2003, Abridged Edition in English (McIlwaine, 2003) and Online Edition (UDC Consortium, 2013)

The domain analysis of urban studies involved identifying primary subjects in the urban discourses, using documentary evidence for synthesis of key disciplines. Five of the keywords used for this purpose are: urban, city, local, regional, and settlements. See Figure 4 for the growth of literature on urban, exhibited in the Google Books Ngram viewer, which has been growing since 19th century.⁸

From an urban librarianship practice, a select list of urban textbooks and edited works were identified. Using the Library of Congress Subject Headings (LCSH), few books are methodically selected to show the disciplinary diversity of urban focused subjects. Through practice, few divergent emerging areas observed are presented using key published books with their LCSH subject headings to show the various disciplines of study, where urban is studied through different facets of methodical, research and practice perspectives. However, since this study evaluated urban at the top-level class and divisions in library classification schemes, hence, at the core is in-depth, but its breadth is limited in scope and not comprehensive of urban studies domain. Some of the books listed here demonstrate this through the subject headings (LCSH). See section urban studies in DDC.

Analysis and Findings

Key Vocabularies

Since urban studies do not have a widely accepted canon, elusive in nature and fundamentally draws on from other disciplines, it is essential to capture key vocabularies, which define them. In the course of the domain analysis, we found the following definitions are central to understand the urban. The growth of this vocabulary since the early 20th century is shown in Figure 5, wherein 1960s had a sharp increase in urban affairs and research.⁹ This key vocabulary connote meanings, which distinguish them as they evolved in the urban scholarship and discourses, over different periods:

Ekistics – is the science of human settlements. It involves the descriptive study of all kinds of human settlements and the formulation of general conclusions aimed at achieving harmony between the inhabitants of a settlement and their physical and sociocultural environments (Doxiadis, 2005; Sampaolo and Gaur, 2018).

Human Settlements – is an integrative concept that comprises: (a) physical components of shelter and infrastructure; and (b) services to which the physical elements provide support, that is to say, community services such as education, health, culture, welfare, recreation and nutrition (United Nations, 1997).

Urbanization – is increase in the proportion of a population living in urban areas; and a process by which a large number of people becomes permanently concentrated in relatively small areas, forming cities (“Urbanization”, 2003).

⁸ <http://books.google.com/ngrams>

⁹ <http://books.google.com/ngrams>

Urbanism – is descriptive of the way of life found in the modern city. Seen as an essentially impersonal, secondary, and contractual way of life, associated in its extreme form with anonymity and transient contact. Moreover, urbanism is fluid and competitive and varies with places and times (Wirth, 1938; Anderson, 1959).

Urban Studies – is a coherent field and is of practical value, as it remains oriented toward the creation, preservation, transmission, and validation of knowledge about urban settlement systems, integration of otherwise isolated facts relevant to such systems, and/or the application of such knowledge in service of urban communities (Bowen, Dunn and Kasdan, 2010, p. 201).

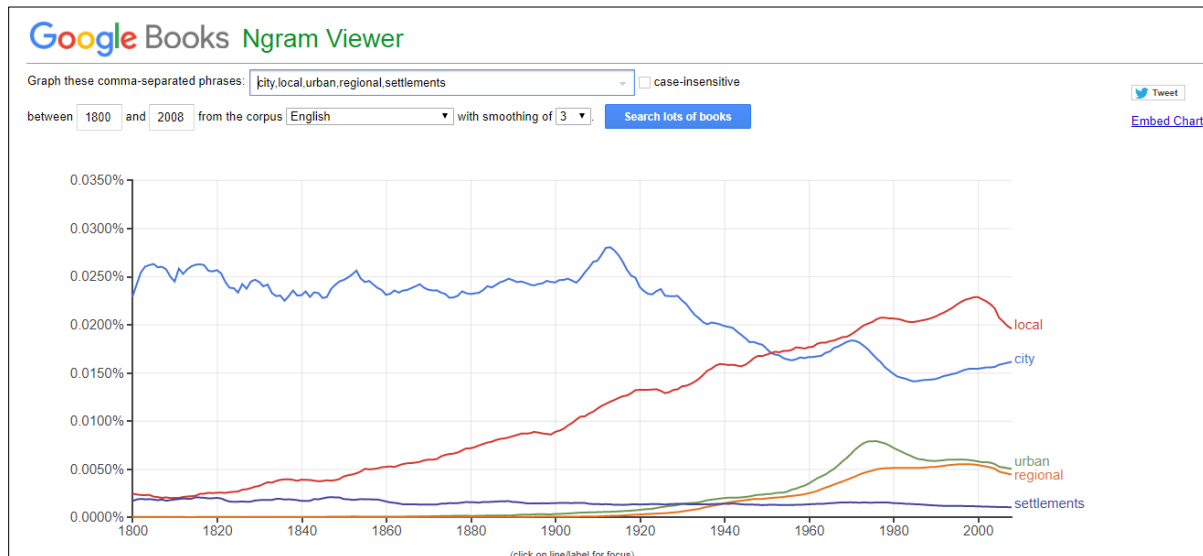


Figure 4. Growth of urban literature from 1800-2008.

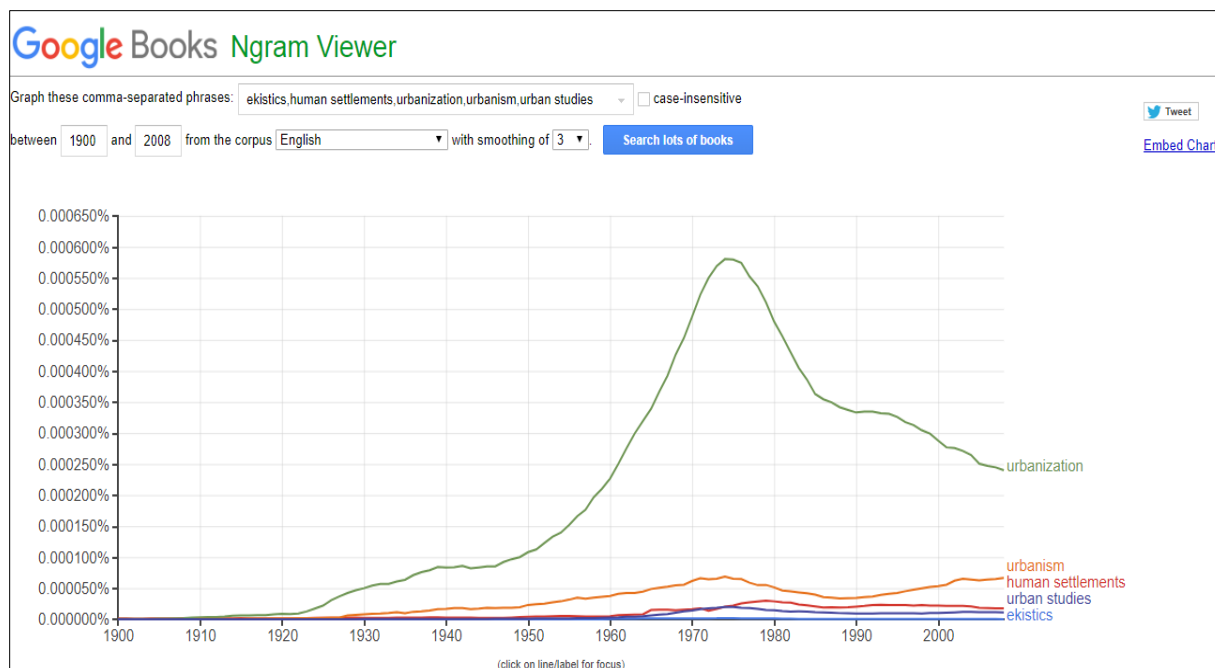


Figure 5. Growth of urban research from 1900-2008.

Comparative subject treatment of ‘Urban’ in LC, UDC and DDC Schemes

In order to synthesize the urban subjects and to demonstrate urban treatment and vocabulary control, Table 1 is extracted from Library of congress Classification, Universal Decimal Classification and Dewey Decimal Classification schemes and we compared the subject treatment of urban. All the three classification schemes, have rich history of organizing universal knowledge, periodically updated and have been extensively used in public, specialist and academic libraries worldwide (See their edition history in Methodology section). Each of them vary in their approach to study urban studies. This section outlines the predominant subjects emerged in comparing these three schemes, as below:

1. Urban Planning and Development

Planning in LC mainly includes city planning, regional planning and economic planning, whilst the former two are highly interlinked, economic planning involves measuring economic growth and development, in terms of land use, agriculture, industries and businesses, labour, work and working class, special industries and trades (Library of Congress Classification, 2018). Under social sciences, as a community, DDC has a strong focus on planning and development of cities, urban policy and urban sociology. However UDC and LC treat city planning under arts in Class 71 for physical planning, regional, town and country planning, landscapes, parks, gardens under Fine Arts (FA) respectively.

DDC	
Social Sciences – 300	The Arts – 700
Communities (Class 307)	Area planning and landscape architecture (Class 711)

Planning and Development	Area planning (civic art)	
Human Settlement	Local community planning (city planning)	
Community planning	Urban renewal	
City planning	Conservation	
Resettlement	Rehabilitation	
Redevelopment	Redevelopment	
Kinds of communities		
Urban communities		
Urban policy		
Urban sociology		
UDC		
The Arts (Class 71)	Geography (Class 91)	
Physical planning. Regional, town and country planning. Landscapes, parks, gardens	911 General geography	
711. Principles and practice of physical planning. Regional planning. Town and country planning ◇711(1-21) Urban: town planning	911.3 Human geography (cultural geography) ◇911.3:316 Social geography ◇911.3:32 Political geography 911.37 Settlements. Settlement geography	
LC		
Geography (General) (Subclass GF)	Social Sciences (Subclass HT)	Fine Arts (Subclass NA)
G140 Great cities of the world Including capitals of the world, great streets of the world, etc.	Communities. Classes. Races	Architecture
Settlements Cities. Urban geography	City planning	Aesthetics of cities. City planning and beautifying

Table 2. Distribution of urban in disciplines

In social sciences, urban as a community has been strongly represented in LC and DDC schemes, however it goes under physical planning in UDC and area planning in DDC. In DDC, area planning under architecture treats equally a large part of planning aspects of city planning in designing physical environment for public, welfare, convenience and pleasure and is inclusive of urban renewal, conservation, rehabilitation and redevelopment. In UDC, however, city planning became the prime focus as in physical planning, regional, town and country planning and landscaping aspects. UDC concentrates on preservation of rural and urban amenities generally, including rural and urban road systems. Community development has been an integral part of this discourse. Urban communities in social aspects are treated in social sciences in DDC, whereas livability of community through architecture is dealt in 711 under area planning. Both the LC and DDC have focused on urban as a community, where sociology, classes and races are treated in great deal. LC brought settlements under the geography, whereas DDC has under communities in social sciences.

2. Rural-urban Relations

Urban/rural binaries are predominant and rural linkages are inseparable in DDC and LC schemes. In DDC, rural development goes under the planning and development, whereas LC has this as *Rural groups* and *Urban groups* (See Table 3). Both the LC and DDC have rural sociology as part of this community discourse. In DDC, rural-urban continuum includes migration to and from rural to urban areas, including resettlement (DDC, 2011, p. 362).

DDC
307.1416 Rural development
307.2 Movement of people to, from within communities
307.24 Movement from rural to urban communities Class here rural exodus
307.26 Movement from urban and rural communities Class here urban exodus
307.72 Rural communities Class here rural sociology, rural villages
307.74 Suburban communities
307.76 Urban communities Class here urban sociology
307.762 Small urban communities Class here comprehensive works on villages
UDC
719 Preservation of rural and urban amenities generally
728 Domestic architecture. Housing. Residential buildings
◇ 728.1 (1-22) Rural housing. Dwellings in the country
LC
HT51-1595 Communities. Classes. Race
HT101-395 Urban groups. The city. Urban sociology
HT321-325 The city as an economic factor. City promotion
HT330-334 Metropolitan areas
HT351-352 Suburban cities and towns
HT361-384 Urbanization. City and country
HT401-485 Rural groups. Rural sociology
HD2330 Rural industries

Table 3. Rural-urban relations in classification schemes

3. Urban as a place (Common Auxiliaries)

As one of the common form of expression, space, in all the three schemes, identify urban and treat it in a variety of ways, as areas, regions, places in general in the common auxiliaries of classification schemes. In DDC Table 2 notations 11-17 deals with continent, country and locality, then get characterized by zonal, physiographic and socioeconomic regions. LC has

special class spatial studies (GF95), whereas UDC has a unique treatment of study for areas in geography for Area studies (908) as study of a locality. Class here comprehensive studies of the history, geography, customs, culture, economy etc. of an area. Table 4. shows the treatment of urban:

DDC. Table 2: Areas	
Socioeconomic regions	By degree of development
- 172	Developed regions
	Developing regions
- 173	By concentration of population
	Urban regions
	Suburban regions
	Rural regions
	Rural villages
UDC	
Common auxiliaries of place	
(1/9) Common auxiliaries of place. Table 1e	(1-2/-4) Political units. Administrative units (1-2) Lowest administrative units. Localities Including: Districts, communes, municipalities etc. (1-24) Joint local administrative units Including: Cantons (1-25) Capital cities. Metropolises

Table 4. Place in library classification schemes.

LC. Class H. Subclass HT.

UDC. Class 7. Subclass 71.

HT51-1595	Communities. Classes. Races	71	PHYSICAL PLANNING. REGIONAL, TOWN AND COUNTRY PLANNING.
HT51-65	Human settlements. Communities		LANDSCAPES, PARKS, GARDENS
HT101-395	Urban groups. The city. Urban sociology		⇒ 911.37
HT161-165	Garden cities. "The city beautiful"		
HT165.5-169.9	City planning	711	Principles and practice of physical planning. Regional planning. Town and country planning
HT170-178	Urban renewal. Urban redevelopment		Urban: town planning
HT201-221	City population	◇ 711(1-21)	General principles and practice. Land development. Plans
	Including children in cities, immigration	711.1	Arrangements of buildings in towns. Site planning. Grouping
HT231	Effect of city life	711.6	Traffic routes (layout, planning)
HT251-265	Mental and moral life	711.7	Public utilities. □ Distribution lines. Supply lines
HT281	Recreation. Amusements	711.8	Subsurface utilities
HT321-325	The city as an economic factor. City promotion	◇ 711.8(24)	
HT330-334	Metropolitan areas	712	Planning of landscape (natural and designed). Parks. Gardens
HT351-352	Suburban cities and towns		⇒ 630, 635
HT361-384	Urbanization. City and country	712.2	Planning of the landscape pattern in general
HT388	Regional economics. Space in economics	◇ 712.2(1-75)	Planning of national parks ??
HT390-395	Regional planning	712.3	Landscape gardening in general (planning, layout, design, execution)
HT401-485	Rural groups. Rural sociology	712.4	Planting design. Vegetation, plant forms (arrangement, planting)
HT601-1445	Classes	712.5	Water features
HT621-635	Origin of social classes	◇ 712.5(282)	Flowing waters. Rivers, streams
HT641-657	Classes arising from birth	◇ 712.5(285)	Still waters. Lakes, ponds
	Including royalty, nobility, commons		Structural features in general
HT675-690	Classes arising from occupation	712.6	<i>Details by :624..., :69..., :72...</i>
HT713-725	Caste system		Garden ornaments
HT731	Freedmen	712.7	
HT751-815	Serfdom		Cemeteries. Graveyards. Crematoriums. Other places for disposal of the dead (planning, design, upkeep etc)
HT851-1445	Slavery	718	
HT1501-1595	Races		Preservation of rural and urban amenities generally
	Including race as a social group and race relations in general	719	⇒ 502

Table 5. Comparative subject treatment of 'Urban' in LC, UDC and DDC

DDC. Main class 300. Division 307.

307 Communities

>307.1–307.3 Specific aspects of communities

Add to each subdivision identified * as follows:

1 Specific kind of communities

Add to 1 the numbers following 307.7 in 307.72–307.77, e.g., cities 16

Class comprehensive works in 307

307.1 *Planning and development

307.12 Planning

See also 711 for the physical aspects of area planning

307.14 Development

Class here human settlement

Class resettlement in 307.2; class redevelopment in 307.34

307.2 *Movement of people to, from within communities

Includes resettlement; Class comprehensive works on population in 304.6

307.24 Movement from rural to urban communities

Class here rural exodus

307.26 Movement from urban and rural communities

Class here urban exodus

307.3 *Structure

Class movement with communities in 307.2

307.32 Physical setting

307.33 Patterns of use

307.332 Industrial use

307.333 Commercial use

Class here business districts

307.334 Recreational use

307.336 Residential use

Including housing succession

Class here housing patterns, sociology of housing
See also 363.58 for housing programs

307.3362 Neighborhoods

Class ghettos in 307.3366

307.3364 Slums

307.3366 Ghettos

307.34 Redevelopment

Class community planning in 307.12

307.342 City core

Class here inner cities

307.344 Slum clearance

307.346 Parks and recreational facilities

307.7 Specific kinds of communities

Class a specific aspect of specific kinds of communities in 307.1–307.3

307.72 Rural communities

Including plantations considered as communities

Class here rural sociology, rural villages

Class agricultural sociology, the plantation

considered as a system of production in 306.349

307.74 Suburban communities

307.7409 History and biography

Do not use for geographic treatment; class in

307.7609

307.76 Urban communities

Class here urban policy (government policy on cities), urban sociology, interdisciplinary works on cities

For suburban communities, see 307.74. For a specific aspect of cities, see the aspect, e.g., public administration of cities 352.16

307.7609 History, geographic treatment, biography

Class here specific suburban communities, specific urban communities regardless of size or kind.

> 307.762–307.764 Urban communities by size

Class specific urban communities regardless of size in 307.7609; class comprehensive works in 307.76

307.762 Small urban communities

Class here comprehensive works on villages. For rural villages, see 307.72

307.763 Medium-sized urban communities

307.764 Large urban communities

Class here metropolitan areas as communities. For medium-sized communities, see 307.763

> 307.766–307.768 Urban communities by kind

Class specific urban communities regardless of kind in 307.7609; class comprehensive works in 307.76

307.766 Mining and industrial towns

Class company towns in 307.767

307.767 Company towns

307.768 New towns

307.77 Self-contained communities

Class here voluntary socialist and anarchist communities

307.772 Tribal communities

Class tribal communities considered in context of culture and institutions of indigenous ethnic and national groups in 305.8

307.774 Communes

Class kibbutzim in 307.776

307.776 Kibbutzim and moshavim

Standard subdivisions are added for either or both topics in heading

Table 5. (Contd.). Comparison of subject treatment of ‘Urban’ in LC, UDC and DDC

Urban studies in DDC: A case study coverage and disciplines: The case of DDC

DDC as a general library classification scheme is widely used in Anglo-American countries and in other countries where English as a second-language is used, mainly in organizing knowledge in print and electronic media among academic libraries. Enumerative in nature, DDC is periodically updated; stay current to capture emerging fields and disciplines. This section looks at the key disciplinary concentrations of urban, as organized in the Edition 23. Following is the section of book examples, including edited books. This is to demonstrate key documentary evidence, where urban as a core subject of study is discussed through main and applied areas of study, research and practice. Below the each reference, Library of Congress Subject Headings (LCSH) are provided.

100 Psychology

155.942 Environmental Psychology

Krupat, E. (1985). *People in cities: The urban environment and its effects*. Cambridge: Cambridge University Press.
City and town life – Psychological aspects.

200 Religion

270 Cities and towns in Christianity

Georgi, D. (2005). *The city in the valley: Biblical interpretation and urban theology*. Atlanta: Society of Biblical Literature.
Bible. New Testament – Criticism, interpretation, etc. Cities and towns – Religious aspects – Christianity. Cities and towns – Biblical teaching. Theology, Doctrinal.

300 Social Sciences

304.2 Human Ecology

Boyle, M. (2014). *Human geography: A concise introduction*. Malden, MA: John Wiley & Sons.
Human geography

Archer, K., & Bezdecny, K. (Eds.). (2016). *Handbook of cities and the environment*. Cheltenham: Edward Elgar Publishing.
Urban ecology (Sociology) – Handbooks, manuals, etc.

Massey, D. (2013). *Space, place and gender*. Minneapolis: University of Minnesota Press.
Human geography. Spatial behavior. Space and time. Sex role. Social interaction. Personal space. Feminist theory.

Massey, D. (2005). *For space*. London: Sage.
Geographical perception. Political geography. Globalization. Regionalism – Philosophy.

Low, N., Gleeson, B., Elander, I., & Lidskog, R. (Eds.). (2000). *Consuming cities: The urban environment in the global economy after the Rio Declaration*. London: Routledge.

Urban ecology (Sociology). Sustainable development.

305.569091724 Urban Poor

Staples, J. (2007). *Livelihoods at the margins: Surviving the city*. Walnut Creek, CA: Left Coast Press.

Urban poor – Developing countries. Sociology, Urban – Developing countries.

307.1216 City Planning

Levy, J. M. (2017). *Contemporary urban planning*. New York: Taylor & Francis.

City planning – United States. Urban policy – United States. Urbanization – United States. Sociology, Urban – United States.

Sanyal, B., Vale, L. J., & Rosan, C. D. (Eds.). (2012). *Planning ideas that matter: Livability, territoriality, governance, and reflective practice*. Cambridge, Mass.: MIT Press.

City planning – Social aspects.

Kar, A. K., Gupta, M. P., Ilavarasan, P. V., & Dwivedi, Y. K. (Eds.). (2017). *Advances in smart cities: Smarter people, governance, and solutions*. Boca Raton: CRC Press.

Cities and towns – Technological innovations. City planning - Technological innovations. Urban policy.

307.1416 Urban Development

Jonas, A.E.G. & Wilson, D. (1999). *The urban growth machine: Critical perspectives, two decades later*. Albany, NY: SUNY Press.

Cities and towns - Growth. Community development. Municipal government. Urban policy.

307.336 Urban Slums

Fischer, B., McCann, B., & Auyero, J. (Eds.). (2014). *Cities from scratch: Poverty and informality in urban Latin America*. Duke University Press.

Slums – Latin America. Urban poor – Latin America. Social marginality – Latin America.

307.76 Communities

Jacobs, J. (2017). *The death and life of great American cities*. New York: Modern Library.

City planning – United States. Urban renewal – United States. Urban policy –United States.

Talen, E. (2012). *City rules: How regulations affect urban form*. Washington, DC: Island Press.

City planning –United States. City planning and redevelopment law – United States. Zoning law – United States.

Benton-Short, L., & Short, J. R. (2013). *Cities and nature*. London: Routledge.

Urban ecology (Sociology). Urbanization – Environmental aspects. City planning – Environmental aspects. Urban pollution. Sustainable development.

Adler, F. R., & Tanner, C. J. (2013). *Urban ecosystems: Ecological principles for the built environment*. Cambridge, UK: Cambridge University Press.

Urban ecology (Sociology). Urban ecology (Biology).

Pacione, M. (2013). *Urban geography: A global perspective*. London: Routledge.
Urban geography.

Tellier, L. N. (2009). *Urban world history: An economic and geographical perspective*. Québec: Presses de l'Université du Québec,
Cities and towns. History. Sociology, Urban. Polarization (Social sciences). Space in economics. World history. Economic history.

Crinson, M. (2005). *Urban memory: History and amnesia in the modern city*. London: Routledge.
Urban sociology. Cities and towns. History. Architecture and history. Historic preservation. Memorialization. Memory – Social aspects.

Fariás, I., & Bender, T. (Eds.). (2012). *Urban assemblages: How actor-network theory changes urban studies*. London: Routledge.
Cities and towns – Growth.

Barthelemy, M. (2016). *The structure and dynamics of cities: Urban data analysis and theoretical modeling*. Cambridge, UK: Cambridge University Press.
Cities and towns – Statistical methods. Quantitative research. System analysis.

Jonas, A. E., McCann, E., & Thomas, M. (2015). *Urban geography: A critical introduction*. Chichester, UK: Wiley-Blackwell.
Urban geography. Human geography.

Kitchin, R., Lauriault, T. P., & McArdle, G. (Eds.). (2018). *Data and the city*. London: Routledge.
Cities and towns – Statistics. Urbanization – Statistics. City Planning – Statistical methods. City Planning – Data processing.

320.85 Urban Politics (City government)

Brenner, N. (2004). *New state spaces: Urban governance and the rescaling of statehood*. Oxford: Oxford University Press.
State, The. Globalization. Local government.

Brenner, N., Jessop, B., Jones, M., & Macleod, G. (Eds.). (2008). *State/space: A reader*. Malden, MA: John Wiley & Sons.
The state. Globalization. Local government. Regionalism.

Davidson, M., & Martin, D. (Eds.). (2013). *Urban politics: Critical approaches*. London: Sage.
Cities and towns - Political aspects. Urban geography. Municipal government. Metropolitan government.

Barber, B. R. (2013). *If mayors ruled the world: Dysfunctional nations, rising cities*. New Haven: Yale University Press.

Mayors – Case studies. Municipal government. Leadership. Comparative government.

Judd, D. R. (2015). *City Politics: The political economy of urban America*. London: Routledge.
Municipal government – United States. Urban policy – United States. Urban sociology – United States. United States – Economic policy.

Licai, W. (2018). *China's township system: Governance and reform*. Singapore: World Scientific.

Local government – China. Neighborhood government – China. Villages – China. Community development – China.

330.91732 Urban Economics

Tabb, W. K., & Sawers, L. (Eds.). (1984). *Marxism and the metropolis: New perspectives in urban political economy*. New York: Oxford University Press.

Urban economics. Marxian economics. Cities and towns – United States.

McCann, P. (2013). *Modern urban and regional economics*. Oxford, UK: Oxford University Press.

Urban economics. Regional economics.

McDonald, J. F., & McMillen, D. P. (2011). *Urban economics and real estate: Theory and policy*. Malden, MA: John Wiley & Sons.

Real estate business – United States. Real estate development – United States. Cities and towns – United States – Growth. Urban economics.

O'Sullivan, A. (2012). *Urban economics* (8th Ed.). New York: McGraw-Hill/Irwin.

Urban economics.

Kim, Y. H., & Short, J. R. (2007). *Cities and economies*. Routledge.

Urban economics. Urban sociology. Cities and towns – History. Globalization.

Obeng-Odoom, F. (2016). *Reconstructing urban economics: Towards a political economy of the built environment*. London: Zed Books.

Urban economics.

Sassen, S. (2018). *Cities in a world economy*. Thousand Oaks, CA: Sage Publications.

Urban economics.

Metropolitan areas – Cross-cultural studies. Cities and towns – Cross-cultural studies. Urban sociology.

331.120954 Urban Informal Labour

Ahluwalia, S. (1998). *Employment promotion in the urban informal sector: Proceedings of the national seminar held at IAMR under the sponsorship of the International Labour Organisation*. New Delhi. New Age International.

Informal sector (Economics) – India – Congresses. Small business – India – Employees – Congresses.

Papola, T. S. (1983). *Women workers in an Indian urban labour market* (No. 141). Geneva: International Labour Office.

Women – Employment – India. Labor supply – India.

333.5095957 Urban Land Use

Haila, A. (2015). *Urban land rent: Singapore as a property state*. Malden, MA: Wiley-Blackwell.

Land use, Urban – Singapore. Rent – Singapore. Real property – Singapore. Urban policy – Singapore. Real estate development – Singapore.

Berke, P. R., Godschalk, D. R., Kaiser, E. J., & Rodriguez, D. A. (5th ed). (2006). *Urban land use planning*. Champaign, Ill: University of Illinois Press.

City planning – United States. Regional planning – United States. Land use, Urban – United States.

333.79091732 Urban Energy

Keirstead, J., & Shah, N. (Eds.). (2013). *Urban energy systems: An integrated approach*.

London: Routledge.

Cities and towns – Energy consumption. Power resources. Energy development – Environmental aspects. Sustainable urban development.

336.01454 Local Finance

Mohanty, P. K. (2016). *Financing cities in India: Municipal reforms, fiscal accountability and urban infrastructure*. New Delhi: Sage.

Municipal finance – India. Municipal revenue – India. Local taxation – India. Municipal services – India. Municipal government – India.

338.927091732 Sustainable Development

Vojnovic, I. (2013). *Urban Sustainability: A global perspective*. East Lansing: Michigan State University Press.

Urban ecology (Sociology). Sustainable urban development. City planning – Environmental aspects.

338.191724 Urban Agriculture

Dubbeling, M., De Zeeuw, H., & van Veenhuizen, R. (2010). *Cities, poverty and food: Multi-stakeholder policy and planning in urban agriculture*. Rugby, UK: Practical Action.

Food supply. Food security. Urban agriculture – Economic aspects.

de Zeeuw, H., & Drechsel, P. (Eds.). (2015). *Cities and agriculture: Developing resilient urban food systems*. London: Routledge.

Urban agriculture. Sustainable agriculture. Food supply. Food security.

352.16 Urban Administration

Siddiqui, K. (2004). *Megacity governance in South Asia: A comparative study*. Dhaka: University Press.

City planning – India. City planning – Bangladesh. City planning – Pakistan.

Ravindra, A. (1996). *Urban land policy: Study of metropolitan city*. New Delhi: Concept Publishing.

City planning – India – Bangalore. Land use – Government Policy – India – Bangalore.

Goldsmith, S., & Crawford, S. (2014). *The responsive city: Engaging communities through data-smart governance*. John Wiley & Sons.

Internet in public administration – United States. Public-private sector cooperation – United States. Cities and towns – United States. Digital Media – United States.

Sharma, S. (2015). *Hourglass management paradigm*. London: Bloomsbury.
Leadership. Political planning.

Rao, N. (2014). *Reshaping city governance: London, Mumbai, Kolkata, Hyderabad*. London: Routledge.

Municipal government – India – Case studies. Urbanization – India – Case studies.

346.045 Law for Regional and Local Community Planning

Grant, M. J. (1982). *Urban planning law*. London: Sweet & Maxwell.

City planning and redevelopment law. Great Britain.

Valverde, M. (2012). *Everyday law on the street: City governance in an age of diversity*. Chicago: University of Chicago Press.

Municipal government. Municipal corporations. City planning and redevelopment law.

Davidson, N., & Mistry, N. (Eds.). (2016). *Law between Buildings: Emergent global perspectives in urban law*. Taylor & Francis.

City planning and redevelopment law. Land use – Law and legislation. Local government – Law and legislation. Housing – Law and legislation.

361.6 Socioeconomic Planning and Development (Governmental/social action)

Hall, P., & Tewdwr-Jones, M. (2011). *Urban and regional planning*. 5th ed. London: Routledge.

City planning. Regional planning. City planning - Great Britain. Regional planning - Great Britain.

362.1042 Urban Health

Vlahov, D., Boufford, J. I., Pearson, C. E., & Norris, L. (Eds.). (2011). *Urban health: Global perspectives*. San Francisco, CA: John Wiley & Sons.

Urban health.

Johnson, S. (2006). *The ghost map: The story of London's most terrifying epidemic--and how it changed science, cities, and the modern world*. New York: Riverhead Books.

Cholera – England – London – History – 19th century.

362.5 Urban Poverty

Mingione, E. (Ed.). (2008). *Urban poverty and the underclass: A reader*. Oxford, UK: Blackwell.

Urban poor. Urban poor – Europe. People with social disabilities. People with social disabilities – Europe. Homelessness.

Satterthwaite, D., & Mitlin, D. (2013). *Reducing urban poverty in the global south*. London: Routledge.

Urban poor – Developing countries. Poverty – Developing countries.

363.342 Climate Change and Disasters

Baker, J. L. (Ed.). (2012). *Climate change, disaster risk, and the urban poor: Cities building resilience for a changing world*. Washington, D.C.: World Bank.

Urban poor – Developing countries. Climatic changes – Social aspects – Developing countries. Climatic changes – Effect of human beings on – Developing countries. City planning – Environmental aspects – Developing countries. Urban ecology (Sociology) – Developing countries. Urban health – Developing countries. Urban policy – Developing countries.

Shaw, R., Surjan, A., & Parvin, G. A. (2016). *Urban disasters and resilience in Asia*. Oxford, UK: Butterworth-Heinemann.

Subject headings: Disasters – Asia. Emergency management – Asia. Cities and towns – Growth.

363.5 Urban Housing

Jain, A. K. (2009). *Urban housing and slums*. New Delhi: Readworthy Publications.

Urban poor – Housing – India. Housing policy – India. Slums – Government policy – India. Squatter settlements – Government policy – India.

363.60681 Urban Infrastructure

Wellman, K., & Spiller, M. (2012). *Urban infrastructure: Finance and management*. Chichester: John Wiley & Sons.

Infrastructure (Economics) – Finance. Infrastructure (Economics) – Australia – Finance – Case studies. Public works. Urban economics. Urban policy.

363.73874 Urban Climate

Bulkeley, H. (2013). *Cities and climate change*. New York: Routledge.

Climatic changes – Environmental aspects. Climatic changes – Government policy. Urban ecology (Sociology)

Rauland, V., & Newman, P. (2015). *Decarbonising cities: Mainstreaming low carbon urban development*. Cham: Springer.

City planning – Environmental aspects. Carbon dioxide mitigation. Urban ecology (Sociology). Carbon dioxide – Environmental aspects.

Santamouris, M., & Kolokotsa, D. (Eds.). (2016). *Urban climate mitigation techniques*. New York: Routledge.

Climate change mitigation. Urban climatology. City planning

363.8 Urban Food Supply

Steel, C. (2013). *Hungry city: How food shapes our lives*. London: Vintage.

Food supply. Food supply – Social aspects. Food industry and trade. Food industry and trade – Social aspects. Cities and towns. Rural-urban relations. Food habits. Food habits – Social aspects. Public health.

364.9 Urban Crime

Caldeira, T. P. (2000). *City of walls: Crime, segregation, and citizenship in São Paulo*. Berkeley, CA: University of California Press.

Crime – Brazil. São Paulo. Segregation – Brazil – São Paulo. Social classes – Brazil – São Paulo. Urban anthropology – Brazil – São Paulo. Police – Brazil – São Paulo. São Paulo (Brazil) – Social conditions.

370.91732 Urban Education

Lipman, P. (2013). *The new political economy of urban education: Neoliberalism, race, and the right to the city*. New York: Routledge.

Urban education – United States. Multicultural education – Curricula – United States. Education – Curricula – United States. Cultural pluralism – United States. Toleration – United States.

Johnson, L., Finn, M. E., & Rebecca, L (2012). *Urban education with an attitude*. Albany: SUNY Press.

Urban education – United States – Case studies. Community education – United States – Case studies. Popular education – United States – Case studies. Teachers – Training of – United States – Case studies. Curriculum change – United States – Case studies.

388.4 Urban Transportation

Victor, D. J., & Ponnuswamy, S. (2012). *Urban transportation: Planning, operation and management*. New Delhi: Tata McGraw-Hill Education.

Urban transportation. Planning. Transportation. Passenger traffic.

500 Science

551.66091732 Microclimatology

Oke, T. R., Mills, G., & Voogt, J. A. (2017). *Urban climates*. Cambridge: Cambridge University Press.

Urban climatology. Urban ecology (Biology). Architecture and climate. Urban hydrology. Urban heat island. City planning.

577.56 Urban ecology

Forman, R. T. T. (2014). *Urban ecology: Science of cities*. Cambridge, UK: Cambridge University Press.

Urban ecology (Biology).

McDonnell, M. J., Hahs, A. K., & Breuste, J. H. (Eds.). (2009). *Ecology of cities and towns: A comparative approach*. Cambridge, UK; Cambridge University Press.

Urban ecology (Biology). Nature – Effect of human beings on. Urban ecology (Sociology).
Human ecology.

600 Technology

628.114091732 Urban Water

Howard, K. W. (Ed.). (2007). *Urban groundwater, meeting the challenge: IAH selected papers on hydrogeology* 8. New York: Routledge.

Municipal water supply – Congresses. Groundwater recharge – Congresses. Wellhead protection – Congresses. Groundwater – Pollution – Congresses.

630.91732 Urban Food

Ladner, P. (2011). *The urban food revolution: Changing the way we feed cities*. Gabriola, B.C.: New Society Publishers.

Urban agriculture. Sustainable agriculture. Local foods. Food supply. Urban health.

635.977 Urban Forestry

Jonnes, J. (2017). *Urban forests: A natural history of trees and people in the American cityscape*. New York: Penguin.

Trees in cities – United States. Urban forestry - United States. Architecture. Urban design

700 The Arts

700.19 Area Planning and Landscape Architecture (City planning)

Laing, O. (2016). *The lonely city: Adventures in the art of being alone*. London: Macmillan.
Artists – Psychology. Loneliness. City and town life – Psychological aspects.

King, A. (2004). *Spaces of global cultures: Architecture, urbanism, identity*. London: Routledge.
Architecture and globalization. Architecture and society. Architecture, British colonial. City planning – Asia – Case studies. Postcolonialism – Asia – Case studies.

Gehl, J. (2011). *Life between buildings: Using public space*. Washington, DC: Island press.
City planning – Environmental aspects. Pedestrian facilities design.

Kaarsholm, P. (2004). *City flicks: Indian cinema and the urban experience*. New York: Seagull Books.

Motion pictures – India – History and criticism. Cities and towns in motion pictures.

Andersson, J., & Webb, L. (Eds.). (2016). *Global cinematic cities: New landscapes of film and media*. New York: Wallflower Press.

Cities and towns in motion pictures. Cities and towns in mass media.

Whybrow, N. (Ed.). (2014). *Performing cities*. Basingstoke: Palgrave Macmillan.

Theaters – Stage-setting and scenery – Philosophy. Place (Philosophy) in literature. Cities and towns in literature.

800 Literature

809.93321732 Cities and towns in literature

Hayek, G. (2015). *Beirut, imagining the city: Space and place in Lebanese literature*. London: I.B. Tauris,

Arabic literature – Lebanon – 20th century – History and criticism. Arabic literature – Lebanon – 21st century – History and criticism. Lebanese literature – 20th century – History and criticism.

Kaul, S. (2010). *Imagining the urban: Sanskrit and the city in early India*. Ranikhet: Permanent Black.

Sanskrit poetry – History and criticism. Cities and towns in literature. India – Social life and customs.

Jaye, M. C., & Watts, C. (1981). *Literature & the urban experience: Essays on the city and literature*. New Brunswick, N.J.: Rutgers University Press.

American Literature – History and criticism. City and town life in literature. Cities and towns in literature. Literature and society

Westgate, J. C. (2011). *Urban drama: The metropolis in contemporary North American plays*. New York: Palgrave Macmillan.

American drama – 20th century – History and criticism. City and town life in literature. Space and time in literature. Theater – United States – History – 20th century.

Ahrens, J., & Meteling, A. (Eds.). (2010). *Comics and the city: Urban space in print, picture and sequence*. New York: Continuum.

Comic books, strips, etc. – History and criticism. City and town life in literature. Mass media and culture.

Sedia, E. (2008). *Paper cities: An anthology of urban fantasy*. Hoboken, N.J.: Senses Five Press. Fantasy fiction. Short stories.

Watson, J. K. (2011). *The new Asian city: Three-dimensional fictions of space and urban form*. Minneapolis: University of Minnesota Press.

East Asian fiction – History and criticism. Cities and towns in literature. Urbanization in literature. Space in literature. Urbanization – East Asia – History. Cities and towns – East Asia – Growth – History.

Dharwadker, V. (2001). *Cosmopolitan geographies: New locations in literature and culture*. New York: Routledge.

Cities and towns in literature. Internationalism in literature. Internationalism.

900 History and Geography

930 Urban History

Cresswell, T. (2012). *Geographic thought: A critical introduction*. Chichester: John Wiley & Sons.

Human geography - Philosophy.

Ewen, S. (2016). *What is urban history?* Cambridge, UK: Polity Press.
Cities and towns - Historiography. Urbanization – Historiography.

Norwich, J. J. (2014). *Cities that shaped the ancient world*. New York: Thames & Hudson.
Cities and towns, Ancient. Civilization, Ancient. History, Ancient. Urban archaeology. Extinct cities. Urban geography.

Cresswell, T. (2019). *Maxwell Street: Writing and Thinking Place*. Chicago, IL: University of Chicago Press.

Maxwell Street (Chicago, Ill.). Chicago (Ill.) – Social life and customs.

Conclusion

Analyzing the urban knowledge is a multifarious task and to draw the boundaries of urban is a time-consuming and insightful process. Urban studies as a field of inquiry is evolving with critical questions of engagement, functions and forms – centric to human settlements to solve, scale up, complex urban realities and real-world problems at policymaking, socio-economic planning and social change levels. The consequences of industrialization, decentralization, and urbanization have to be addressed through urban challenges and opportunities in the 21st century more critically. This paper reviewed the subject treatment of urban through Library of Congress, Dewey Decimal and Universal Decimal classification schemes, which can be studied in parallel to planning, public health, sociology, arts and architecture domains in particular to understand urban aspects. We analyzed urban from a very top-level domain perspective and the subject treatment of urban in classification schemes is demonstrated by identifying, categorizing and building key areas of disciplines in urban studies, with a display of disciplinary categories of DDC. Given the complexity of the urban subject and its transdisciplinarity, our further research will specifically attempt to map the key disciplines and subfields to propose an urban classification to organize urban knowledge, as modelled in other subject classifications such as music, mathematics and economics and so on.

References

Abrahamson, M. (2004). *Global cities*. New York: Oxford University Press.

Acuto, M., Parnell, S., Seto, K. C., Contestabile, M., Allen, A., Attia, S., ... Zhu, Y. (2018). Science and the future of cities: Report of the International Expert Panel on Science and the Future of Cities. Retrieved from https://www.nature.com/documents/Science_and_the_future_of_cites.pdf

Anderson, N. (1959). Urbanism and urbanization. *American Journal of Sociology*, 65(1), 68-73. Retrieved from <http://www.jstor.org/stable/2773622>

Bates, M. J., & Maack, M. N. (Eds.). (2009). *Encyclopedia of Library and Information Sciences (3rd ed.)*. New York: CRC Press

- Bhan, G. (2019). Notes on a Southern urban practice. *Environment and Urbanization*. <https://doi.org/10.1177/0956247818815792>
- Bounds, M. (2004). *Urban social theory: City, self, and society*. Melbourne: Oxford University Press.
- Bowen, W. M., Dunn, R. A., & Kasdan, D. O. (2010). What is “urban studies”? Context, internal structure, and content. *Journal of Urban Affairs*, 32(2), 199-227.
- Boyle, M. (2015). Homo urbanus: Urbanization and urban form from 1800. In *Human geography: A concise introduction* (pp. 215-239). West Sussex: John Wiley & Sons.
- Brenner, N. (2009). What is critical urban theory? *City*, 13(2-3), 198-207.
- Brenner, N. (2013). Theses on urbanization. *Public culture*, 25(1), 85-114.
- Brenner, N. (2014). *Implosions/Explosions: Towards a study of planetary urbanization*. Jovis, Berlin.
- Brezzi, M. (2012). *Redefining "urban": A New Way to Measure Metropolitan Areas*. Paris: OECD Publishing.
- Connell, R. (2014). Using southern theory: Decolonizing social thought in theory, research and application. *Planning Theory*, 13(2), 210-223.
- Dewey, M., Mitchell, J. S., Beall, J., Green, R., Martin, G., & Panzer, M. (2011). *Dewey decimal classification and relative index* (23rd ed.). Dublin, Ohio: OCLC Online Computer Library Center.
- Doxiadis, C. (2005). The science of ekistics. *Ekistics*, 72(430/435), 32-38. Retrieved from <http://www.jstor.org/stable/43619503>
- Ewen, S. (2016). *What is urban history?* Cambridge, UK: Polity Press
- Florida, R. (2018). *The new urban crisis: Gentrification, housing bubbles, growing inequality, and what we can do about it*. New York: Oneworld.
- Gottdiener, M., & Budd, L. (2015). *Key concepts in urban studies*. New Delhi: Sage.
- Green, R. D., & Kurban, H. (2008). Urban studies. *International Encyclopedia of the Social Sciences*. Retrieved January 20, 2019 from <https://www.encyclopedia.com/social-sciences/applied-and-social-sciences-magazines/urban-studies>
- Hall, S. & Burdett, R. (2018). *Sage handbook of the 21st century city*. London: Sage.
- Harding, A., & Blokland, T. (2014). *Urban theory: A critical introduction to power, cities and urbanism in the 21st century*. New Delhi: Sage.
- Harris, R., & Smith, M. E. (2011). The history in urban studies: A comment. *Journal of Urban Affairs*, 33(1), 99-105.

- Harrison, J., & Hoyler, M. (Eds.). (2015). *Megaregions: Globalization's new urban form?* Cheltenham, UK: Edward Elgar Publishing.
- Harrison, J., & Hoyler, M. (2018). Making sense of the global urban. In J. Harrison and M. Hoyler, (eds.) *Doing global urban research* (pp. 1 – 11). London: Sage.
- Jana, A., Sami, N., & Seddon, J. (2014.). How "Urban" is India? Retrieved from <http://www.theigc.org/wp-content/uploads/2014/08/Arindam-Jana.pdf>
- Johnson, S. (2006). *The ghost map: The story of London's most terrifying epidemic--and how it changed science, cities, and the modern world.* London: Penguin.
- Joshi, B., & Pradhan, K. C. (2018). Officiating urbanisation: What makes a settlement officially urban in India? Retrieved from <http://cprindia.org/research/papers/officiating-urbanisation-what-makes-settlement-officially-urban-india>
- Koch, R., & Latham, A. (Eds.). (2017). *Key thinkers on cities.* London: Sage.
- Lefebvre, H., & Nicholson-Smith, D. (1991). *The production of space.* Blackwell: Oxford.
- Levy, J. M. (2017). *Contemporary urban planning.* New York: Routledge.
- McIlwaine, I. (2003). *Universal Decimal Classification.* London: British Standards Institution.
- McTavish, Jill. "A domain-analytic perspective on sexual health in LCSH and RVM." *NASKO* 3, no. 1 (2011): 83-93.
- Palen, J. J. (2018). *The urban world* (11th ed). Oxford, UK: Oxford University Press.
- Paddison, R. (2001). Studying cities. In R. Paddison (Ed.), *Handbook of urban studies* (pp. 1-9). London: Sage Publications.
- Parker, S. (2015). *Urban theory and the urban experience: Encountering the city.* Second Edition. London: Routledge.
- Phillips, E. B. (2009). *City lights: Urban-suburban life in the global society.* 3rd Edition. New York: Oxford University Press.
- Ramachandran, R. (1992). *Urbanization and urban systems in India.* New Delhi: Oxford University Press.
- Ramadier, T. (2004). Transdisciplinarity and its challenges: The case of urban studies. *Futures*, 36(4), 423-439.
- Reese, L. (2014). The Present and Future of Urban Affairs Research. *Journal of Urban Affairs*, 36(sup2), 543–550. doi:10.1111/juaf.12143
- Rodwin, L. (1973). Innovations for urban studies and planning. *Ekistics*, 266-268.
- Sampaolo, M. & Gaur, A. (Ed.). (2018). *Ekistics.* Retrieved May 11, 2019 from <https://www.britannica.com/topic/ekistics>

Savage, M., & Warde, A., & Ward, K. (2003). *Urban sociology, capitalism and modernity* (2nd ed.). Basingstoke: Palgrave.

Saunders, P. (1986). *Social theory and the urban question*. London: Routledge.

Simone, A. (2010). On cityness. In *City life from Jakarta to Dakar: Movements at the crossroads*. New York: Routledge.

Smiraglia, R. (2015). *Domain analysis for knowledge organization: Tools for ontology extraction*. New York: Chandos Publishing.

Smith, M. E. (2008). Text for a poster presented at the Southwest Symposium, January 2008, Arizona State University) Michael E. Smith, School of Human Evolution & Social Change, Arizona State University

Sivaramakrishnan, K. C., Kundu, A., & Singh, B. N. (2005). *Handbook of urbanization in India: An analysis of trends and processes*. New Delhi: Oxford University Press.

Steinbacher, R., & Benson, V. O. (Eds.). (1997). *Introduction to urban studies*. Dubuque, IA: Kendall/Hunt Publishing.

Surgal, J. (1971). An introduction to urban studies: Ekistics as a tool. *Ekistics*, 32(193), 413-416. Retrieved from <http://www.jstor.org/stable/43617901>

Tandel, V., Hiranandani, K., & Kapoor, M. (2019). What's in a definition? A study on the suitability of the current urban definition in India through its employment guarantee programme. *Journal of Asian Economics*, 60, 69-84.

The Library of Congress. (2018). *Library of Congress Classification*. <https://www.loc.gov/aba/publications/FreeLCC/freelcc.html>

Townsend, A. (2015). The Future of urban science. New horizons in research on human settlements. Retrieved from <https://www.bitsandatoms.net/wp-content/uploads/2019/01/cities-of-data-the-future-of-urban-science.pdf>

UDC Consortium. (2013). *UDC Summary*. Retrieved from <http://www.udcsummary.info/php/index.php?lang=en>

UN Habitat (2016). Urbanization and development: emerging futures. *World cities report*, 3(4), 4-51. Retrieved from <http://wcr.unhabitat.org/wp-content/uploads/sites/16/2016/05/WCR-%20Full-Report-2016.pdf>

United Nations. (2008). *Demographic Yearbook: 2005*. New York: United Nations.

United Nations. (Human Settlements) Glossary of Environment Statistics, Studies in Methods, Series F, No. 67, United Nations, New York, 1997. <https://stats.oecd.org/glossary/detail.asp?ID=1266>

Urbanization. (2003). In *Glossary of environment statistics, studies in methods*, Series F, No. 67. Retrieved from: <https://stats.oecd.org/glossary/detail.asp?ID=2819>

- United Nations (2017). *New urban agenda*. Quito, Ecuador: Habitat III Secretariat.
- United Nations (2018). *The Sustainable Development Goals Report 2018*. New York: United Nations, Department of Economic and Social Affairs.
- Universal Decimal Classification* (Abr. ed.). (2003). London: British Standards Institution.
- UN-DESA. (2018). *World urbanization prospects, 2018 revision*. Retrieved from <https://esa.un.org/unpd/wup/Publications/Files/WUP2018-KeyFacts.pdf>
- Vis, B. (2018). Towards radical comparative urban studies. In *Cities Made of Boundaries: Mapping Social Life in Urban Form* (pp. 12-44). London: UCL Press. Retrieved from <http://www.jstor.org/stable/j.ctv513drk.7>
- Weaver, T. (2017). Urban crisis: The genealogy of a concept. *Urban Studies*, 54(9), 2039-2055.
- Wirth, L. (1938). "Urbanism as a Way of Life," *American Journal of Sociology*, XLI, No. 1 (July, 1938), 1-23
- Zolyomi, A., & Tennis, J. T. (2017). The Autism prism: A domain analysis examining neurodiversity. *Proceedings from North American Symposium on Knowledge Organization* (pp. 139-172). Retrieved from <https://journals.lib.washington.edu/index.php/nasko/article/view/15237/12695>