

COMPARATIVE REVIEW OF WORLD BANK DATA AND EMPIRICAL STUDIES ON INADEQUATE HOUSING

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ABSTRACT: This study analyses the peer-reviewed empirical studies on slums, informal settlements, and inadequate housing, comparing the scientific analysis with the data obtained from the World Bank open data on people living in these conditions. It identifies the existing gap between the countries with the highest number, percentage, and dimensions of slums, with those on which the largest number of research papers aimed at improving the habitability conditions of their citizens are published.

KEY WORDS: Informal settlements, inadequate housing, slums, real estate, habitability

Introduction

Informal settlements date back to the last decade of the 19th century, when, during the Industrial Revolution, major English cities received a mass influx of cheap labour in need of affordable housing. Today, cities are home to more than half of the world's population, concentrated in small nuclei with high population density. According to UN-Habitat, this situation is expected to increase to 68.4% by 2050, estimated to be equivalent to 6.7 billion people. These levels of agglomeration present large differences in habitability between people with higher income and those who are forced to live in inadequate housing; this reality has been present in cities since, at least, the Industrial Revolution (Perlman, 2010). However, the problem today has increased and one in eight people around the world inhabit informal settlements (U.N. Habitat, 2016). According to the World Bank,

by 2018 there were already more than one billion people living in slums around the world. This figure is expected to continue growing in the coming years as the urban population continues to increase (Davis, 2016). Faced with this reality, international institutions and countries have a commitment to ensure the habitability conditions of the citizens on which they act. The right to decent housing is included in the Universal Declaration of Human Rights (Article 25) and the International Covenant on Economic Social and Cultural Rights (Article 11).

Different constitutions also include the right to housing, such as South Africa (Section 26) “Everyone has a right to have access to adequate housing”, Mexico (Article 4) “Every family has the right to enjoy decent and dignified housing”, Uruguay (Article 45) “Every inhabitant of the Republic has the right to enjoy decent housing”, Poland (Article 75) “pursue policies conducive to satisfying the housing needs of citizens”, or Belgium (Article 23.3) “in conformity with Human Dignity”.

In the constitutional texts indicated, the characteristics of housing are mentioned as adequate, decent, or dignified, conditions that may be subject to different perceptions depending on the people, customs, locations, or other reasons. In view of this, the article uses the definition of slum proposed by the United Nations as an area lacking one or more of the following elements: access to drinking water, sanitation, structural quality, living space and security of tenure – conditions included in the Millennium Development Goal (7.D), as well as in the Sustainable Development Goals (11.1). These conditions are also used by the World Bank to generate statistical data.

	Informal Settlements	Slums	Inadequate Housing
Access to water	•	•	•
Access to sanitation	•	•	•
Tenant security	•	•	•
Structural quality	•	•	•
Sufficient living area		•	•
Affordability			•
Accessibility			•
Cultural adequacy			•

Table 1. Criteria used to define slums, informal settlements, and inadequate housing (UN-Habitat)

In turn, UN-Habitat differentiates between slums, informal settlements, and inadequate housing. Their classification is determined by the presence or lack of up to 8 elements, the five previously-mentioned plus another three: affordability, accessibility, and cultural ad-

equacy. On the other hand, compared to these classifications, there are other valuations in which the differences are more based on urban and planning elements (Dovey et al 2020, Ananya Roy 2005) or quality of life (Lilford R, et al. 2019).

Faced with the above situation and the rights and objectives set by national and international institutions, various alternatives have been proposed. However, no model has yet been found that is fully satisfactory for all the parties involved: the state, owners of the occupied land and communities interacting with the land (Basile & Ehlenz 2020, Ehlenz 2018, Shirgaokar & Rumbach 2018, Bassett 2005).

Motivation and research questions

This work arises from the concern to identify the existing gaps between the living conditions of citizens in the world and the analysis of their situation for the adoption of effective improvement measures.

- RQ1: there is a scientific concern about the habitability conditions in slums around the world.
- RQ2: scientific contributions cover the needs of people in different geographical areas.

Research methodology and design

The work has followed two initially independent lines of study that have been combined in the final phase to answer the research questions and obtain the results. For this purpose, it was necessary to access statistical data on the world population living in slums, as well as scientific papers indexed by Clarivate in the web of science. The research involved the following phases:

- i. Data downloads from the World Bank website (data.worldbank.org), from which cross-sectional elements of countries, urban population, total population, population living in slums, population density and gross domestic product were extracted to complete a panel.
- ii. To contrast the scientific interest, existing articles in the Web of Science Core Collection were downloaded – a base list of 9,647 articles on November 28, 2021, under the criteria of “slum”, on which successive filtering was carried out on the Title and Abstract. The resulting articles have been catalogued according to their geographical analysis, under the heading mention of territories or localities (including 425 cities) located in the different countries. This makes it possible to obtain maps and contrast tables.
- iii. The downloads from steps 1 and 2, once analyzed and treated as indicated in the respective phases, have been spatially represented using the Philcarto program

(Philippe Waniez). Choropleth maps were created and the Q6 criterion for class definition was applied. The defined limits are minimum, 5th percentile, 1st quartile, 2nd quartile, 3rd quartile, 95th percentile and maximum.

- iv. Joint study of both analyses by means of the resulting maps and tables to define the relationship between the two and answer the research questions.

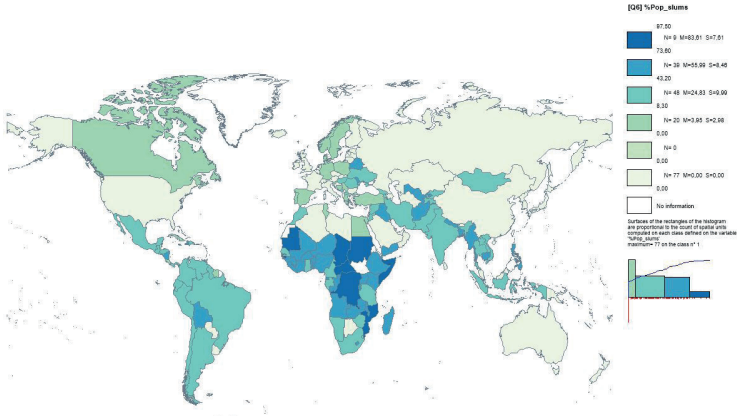


Figure 1. Percentage of the population living in slums by country. Data Source: World Bank. Made with Philcarto

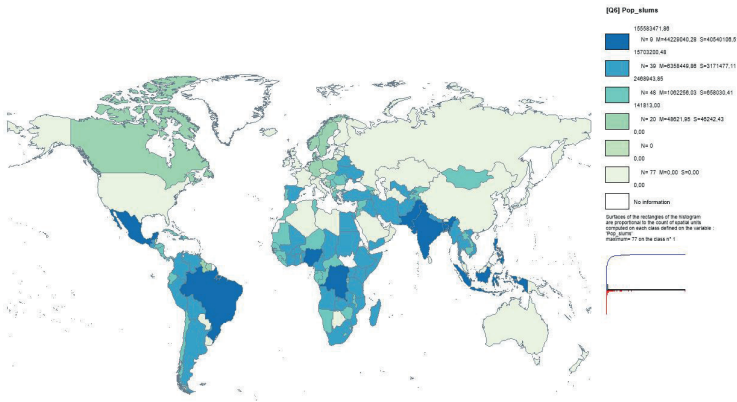


Figure 2. Population living in slums by country. Data Source: World Bank. Made with Philcarto

Results

Data from the World Bank have made it possible to rank the countries measured according to the highest proportion of slum dwellers [Figure 1] in the world, the worst situa-

tion occurs in countries in Africa, with the Central African Republic (98%), South Sudan (97%), Sudan (94%), Chad (87%) and Congo (79%) showing the highest rates.

After this, the data has been analysed in absolute terms [Figure 2], leading to results that vary considerably, in this case India shows a total of 155 million people living in slums. This is followed by Nigeria (48.8), Indonesia (43.6), Pakistan (30.1) and Brazil (28.9).

Regarding the publications [Figure 3] analysed, over time the results show a concentration of research in India (1376 articles), followed by Brazil (445), Bangladesh (418), Kenya (414) and Pakistan (126), these countries representing (63.84%) of the total number of documents analysed. The main data of the countries is represented in Table 2.

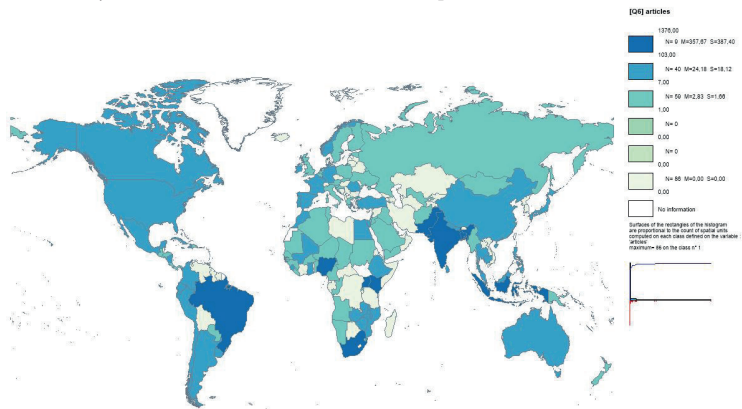


Figure 3. Scientific Articles published in the Web of Science Core Collection. Made with Philcarto

Discussion

The results obtained show a growing concern of scientific research in relation to the conditions of habitability, with a growing volume of publications on the subject that identify the associated problems along with their geographical location. These publications, although covering numerous countries and municipalities around the world, are highly concentrated in specific spaces, with maximum incidence in India, an expected result since it concentrates the largest number of slum dwellers and several of the highest concentrations of people in these conditions.

Combining the research results with the reality of the citizens living in slums, it is observed that the four countries with the highest rates of slum dwellers, namely Central African Republic, South Sudan, Sudan, and Chad, where more than 20 million people live,

do not have works on their reality. In addition, there is a general problem in sub-Saharan Africa, where only Kenya, South Africa and Nigeria have more than five studies.

The situation in Africa is the most alarming due to the expected increase in the urban population in the coming years, from 587 million people in 2020 to an expected 824 million people by 2030 and 1489 million by 2050 (U.N. Habitat 2022). This implies an increase in the urban population from 43.5% today to 58.9% in 30 years time.

The current work shows the need to start or continue studying the specific conditions and housing particularities of the people living in the above-mentioned countries in Central Africa, where practically the entire urban population lives in slums. Also, it invites to analyze the relationship between the existence of universities and the lack of research.

	Population living in Slums	% Urban population living in Slums	WOS Articles con- cerning Slums
Counties with the highest percentage of population living in Slums			
Central African Rep	1,797,038	97.50	0
Sudan	12,726,176	93.60	3
Chad	2,872,867	87.00	0
Mauritania	1,719,945	79.50	2
Congo (Dem. Rep.)	26,989,875	79.10	5
Countries organised according to the highest number of people living in slums			
India	155,583,471	35.40	1376
Nigeria	48,796,224	53.90	103
Indonesia	43,634,407	30.90	106
Pakistan	30,103,784	40.80	126
Brazil	28,914,049	16.30	445

Table 2. Countries with the highest % of urban population and highest number of people living in slums. Data: World Bank.

Conclusions

Guaranteeing a minimum level of quality of life in terms of housing is a global objective enshrined in international treaties, as well as a national right in different countries around the world. Faced with this situation, an increasing number of people find themselves living in inadequate housing.

Scientific analysis is a crucial tool to identify, analyse and define measures to improve the quality of life of these inhabitants. However, research today is highly concentrated in specific countries, among which India stands out, while it is practically non-existent for

other countries, mainly in Central Africa, that have far larger rates of population living in conditions of inadequate housing.

The scarce knowledge on the specific conditions, needs and means of the informal communities living in the countries with the highest rates of slum dwellers in the world is shown as a barrier to decision-making which, consequently, slows down its improvement.

CRedit contribution statement

Alejandro Segura: (50%) conceptualisation, design of the study, acquisition of data, analysis of data, interpretation of data, writing original draft, review, and editing. Miguel Álvarez de Linera: (50%) design of the study, acquisition of data, analysis of data, interpretation of data, writing original draft, review, and editing.

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