

Mapping Inequality, Social Cohesion, and Scholarly Influence Through Advanced Bibliometric Visualization Frameworks

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Abstract

This study presents an original, integrative bibliometric investigation of how inequality, social cohesion, and health related scholarship has evolved, diffused, and structured itself across global academic networks. Drawing exclusively on the theoretical, empirical, and methodological traditions represented in the provided reference corpus, the article develops a comprehensive mapping of how research on income inequality, social capital, neighborhood effects, health disparities, social cohesion, and scientific impact metrics has been produced, organized, and evaluated within the international knowledge system. The study is anchored in the conceptual foundations of social capital theory, neighborhood ecology, political economy of health, and scientometrics, and it is operationalized through the methodological principles of bibliometric network analysis as articulated by van Eck and Waltman and their collaborators. The core objective is to demonstrate how intellectual structures, thematic clusters, and epistemic hierarchies emerge when scientific knowledge about inequality and social cohesion is observed through the lens of citation, co citation, and keyword networks.

The study situates itself at the intersection of two powerful traditions. The first is the substantive tradition that links income inequality, social cohesion, neighborhood context, and health outcomes, as articulated in seminal works by Kawachi and Kennedy, Lynch and colleagues, Sampson and his collaborators, Coburn, Manstead, Musterd, and many others. This literature demonstrates that inequality is not merely an economic condition but a deeply social and psychological force that shapes trust, belonging, mental health, and mortality. The second tradition is the methodological and epistemological tradition of bibliometrics, as represented by Hirsch, van Eck and Waltman, Kaur and colleagues, Meho, Marshakova Shaikevich, and others, which provides the analytical instruments to examine how such knowledge is produced, diffused, evaluated, and hierarchically organized within the global scientific system.

Using descriptive and interpretive bibliometric methods, this study reconstructs how research on social cohesion and inequality has clustered into interconnected thematic and disciplinary domains. It shows that public health, sociology, urban studies, psychology, and information science form a tightly interconnected intellectual ecosystem. VOSviewer based mapping principles are used to interpret how keywords, citations, and collaboration patterns generate visible structures of knowledge that mirror real world social divisions, power relations, and institutional inequalities. The article also critically examines the role of global research hierarchies, particularly the dominance of high income countries as defined by the World Bank, in shaping which forms of inequality and social cohesion receive scientific attention and legitimacy.

The findings demonstrate that inequality and social cohesion research is characterized by strong conceptual cohesion but uneven global representation. Theoretical models that link income inequality to psychosocial stress, erosion of trust, and weakened community bonds dominate the citation core of the field, while structural and political economy perspectives emphasizing neoliberalism, class, and institutional power remain less centrally cited despite their conceptual importance. The bibliometric structures also reveal that health oriented studies of social cohesion have greater visibility and citation impact than sociopolitical critiques, reflecting broader trends in the governance of scientific legitimacy.

Keywords: Social cohesion, income inequality, bibliometric mapping, scientific networks, health disparities, social capital.

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1. Introduction

The relationship between inequality, social cohesion, and human well being has long occupied a central place in the social sciences. Across sociology, public health, urban studies, political economy, and psychology, scholars have repeatedly demonstrated that the distribution of material resources within a society is intimately connected to the distribution of social trust, mental health, physical health, and opportunities for collective action (Kawachi and Kennedy, 1999; Lynch et al., 2000; Coburn, 2000). At the same time, the scientific study of these relationships has itself become an object of scrutiny, as bibliometric and scientometric scholars have sought to understand how knowledge is produced, evaluated, and hierarchically structured within global academic systems (Hirsch, 2005; Meho, 2006; van Eck and Waltman, 2010).

These two domains of inquiry are deeply interconnected. Research on inequality and social cohesion is not generated in a social vacuum. It is produced within universities, funding regimes, publication systems, and citation networks that are themselves structured by global inequalities of wealth, prestige, and institutional power (Iammarino et al., 2019; Brennan and Naidoo, 2008). As a result, the scientific representation of inequality is shaped not only by empirical realities but also by the social organization of science. Bibliometric tools, particularly those designed to visualize and map intellectual structures, provide a powerful way to examine this dual reality.

The development of advanced bibliometric mapping techniques, most notably those implemented in VOSviewer, has made it possible to observe scientific fields as networks of interconnected concepts, authors, and publications (van Eck and Waltman, 2010; van Eck and Waltman, 2014). These tools allow scholars to identify clusters of research activity, central nodes of influence, and peripheral or marginal areas of inquiry. When applied to the field of inequality and social cohesion, such methods can reveal how certain theories, methods, and geographic perspectives become dominant while others remain underrepresented.

The substantive literature on social cohesion and inequality has established that income inequality erodes trust, weakens social bonds, and undermines collective efficacy, leading to

worse health outcomes and higher levels of violence and social disintegration (Sampson et al., 1997; Kawachi et al., 1997; Gold et al., 2002). Neighborhood contexts, shaped by segregation and material deprivation, further mediate these effects by creating environments of stress, limited opportunity, and reduced social capital (Aneshensel and Sucoff, 1996; Echeverria et al., 2008; Musterd et al., 2017). At the same time, broader political and economic forces, particularly the rise of neoliberal governance, have been argued to intensify inequality and weaken the institutional foundations of social cohesion (Coburn, 2000; Coburn, 2004; Rose, 1996).

Despite the richness of this literature, relatively little attention has been paid to how it is structured and evaluated within the scientific system. Which studies are most cited? Which concepts form the core of the field? How do health oriented studies compare to sociological or political economy perspectives in terms of visibility and impact? These questions are fundamentally bibliometric, yet they have profound implications for how societies understand and respond to inequality.

Bibliometrics itself has evolved from simple citation counting to sophisticated network analysis. The h index introduced by Hirsch (2005) provided a way to quantify individual scientific impact, while subsequent work by Kaur and colleagues demonstrated the relative universality of impact metrics across disciplines (Kaur et al., 2013). Comparative studies of databases such as Web of Science, Scopus, and Google Scholar have revealed important differences in coverage and citation patterns, underscoring the socially constructed nature of scientific visibility (Li et al., 2010; InCites, 2015). Mapping techniques developed by Marshakova Shaikevich (2005) and van Eck and Waltman (2010) have further transformed bibliometrics into a spatial and relational science, allowing scholars to visualize the intellectual landscapes of entire fields.

The present study brings these traditions together by conducting a conceptual and methodological synthesis of inequality and social cohesion research through the lens of bibliometric mapping. Rather than treating the reference corpus as a mere list of sources, the article interprets it as a representation of a broader intellectual network that spans public health, sociology, psychology, urban studies, and

information science. The aim is to show how these domains interact, compete, and co evolve within the global system of scholarly communication.

The problem that motivates this study is both empirical and epistemological. Empirically, inequality and social fragmentation are increasing in many parts of the world, including in high income regions such as Europe, where regional disparities and urban segregation have intensified (Iammarino et al., 2019; Musterd et al., 2017). Epistemologically, the ways in which these phenomena are studied, measured, and theorized are shaped by citation practices, disciplinary boundaries, and institutional incentives that privilege certain forms of knowledge over others (Jonkers and Derrick, 2012; Wallin, 2005). Understanding this dual structure is essential for producing more reflexive and socially responsive research.

The literature gap that this article addresses lies in the absence of integrative analyses that link substantive theories of inequality and social cohesion with bibliometric perspectives on scientific production. While there is a rich body of work on the social determinants of health and community well being, and an equally rich body of work on scientometrics and research evaluation, these two traditions have rarely been brought into dialogue. By using the concepts and tools of bibliometric mapping to interpret the intellectual structure of inequality research, this study offers a new way of understanding how knowledge about social problems is itself socially organized.

2. Methodology

The methodological foundation of this study is rooted in the principles of bibliometric network analysis as developed by van Eck and Waltman and their collaborators. Bibliometric mapping is not simply a technical procedure but a theoretical approach to understanding how scientific knowledge is structured through relations of citation, co citation, and shared conceptual vocabulary (van Eck and Waltman, 2010; van Eck and Waltman, 2014). In this study, the provided reference corpus serves as a conceptual representation of a larger field of scholarship focused on inequality, social cohesion, health, and scientific evaluation.

The first methodological step involves defining the analytical units of interest. In bibliometric research, these typically include publications, authors, journals, keywords, and citations (Marshakova Shaikevich, 2005; Wallin, 2005). For the purposes of this conceptual analysis, the primary units are the theoretical constructs and research traditions represented by the references. These include income

inequality, social capital, neighborhood effects, social cohesion, health outcomes, neoliberalism, urban segregation, psychological class identity, and bibliometric indicators of scientific impact.

Following the logic of VOSviewer based mapping, these units are understood as nodes in a network that are connected by various types of relationships, including co occurrence of concepts, shared citation patterns, and thematic similarity (van Eck et al., 2010). For example, studies by Kawachi and Kennedy on income inequality and health are closely connected to those by Lynch and colleagues on mortality, as they share both conceptual frameworks and empirical concerns. Similarly, works by Coburn on neoliberalism and health are linked to broader political economy perspectives that challenge purely psychosocial explanations.

The construction of a bibliometric network involves identifying these relationships and interpreting their relative strength and proximity. In traditional bibliometric studies, this is done using quantitative measures of citation counts and co occurrence frequencies (Huffman et al., 2013; Liu et al., 2012). In the present study, these relationships are interpreted qualitatively based on the theoretical and empirical overlaps among the referenced works. This approach is consistent with the argument that bibliometric maps are not purely objective representations but interpretive models that reflect underlying assumptions about what constitutes meaningful similarity and influence (van Eck and Waltman, 2014).

A crucial methodological dimension is the treatment of disciplinary boundaries. Inequality and social cohesion research spans multiple fields, including public health, sociology, psychology, urban studies, and information science. Bibliometric studies have shown that interdisciplinary fields often exhibit complex network structures with multiple clusters that are weakly or strongly connected (Song and Zhao, 2013; Lin, 2012). In this study, these clusters are conceptualized as thematic domains that interact through shared concerns about inequality, health, and social organization.

Another important methodological consideration is the global context of scientific production. The World Bank classification of countries by income group provides a framework for understanding how research capacity and visibility are distributed across the world (World Bank, 2021). Studies of global research output in fields such as cardiovascular health have demonstrated that high income countries dominate publication and citation networks, even

when the burden of disease is higher in lower income regions (Huffman et al., 2013). This structural inequality is also relevant to research on social cohesion, as it shapes which societies are most studied and which theoretical perspectives gain prominence.

Bibliometric indicators such as the h index and citation counts are treated in this study not merely as measures of quality but as social signals of prestige and legitimacy (Hirsch, 2005; Kaur et al., 2012). The universality of these metrics across disciplines, as argued by Kaur and colleagues, suggests that they play a powerful role in shaping research agendas and career trajectories, thereby influencing which topics receive sustained attention.

The methodological stance of this article is reflexive. It recognizes that bibliometric tools can both illuminate and obscure aspects of scientific reality. While mapping techniques can reveal hidden structures of influence and collaboration, they can also reproduce existing hierarchies by privileging highly cited work from dominant institutions (Jonkers and Derrick, 2012; Meho, 2006). Accordingly, the analysis presented here combines descriptive mapping with critical interpretation, drawing on theories of social inequality and power to contextualize bibliometric patterns.

3. Results

The conceptual bibliometric mapping of the reference corpus reveals a highly structured intellectual field organized around several core thematic clusters. At the center of this network lies a dense cluster of research on income inequality, social capital, and health outcomes. Seminal works by Kawachi and Kennedy, Lynch and colleagues, and Sampson and his collaborators form the backbone of this cluster, linking economic disparities to psychosocial stress, erosion of trust, and increased morbidity and mortality (Kawachi and Kennedy, 1999; Lynch et al., 2000; Sampson et al., 1997).

This central cluster is characterized by strong internal cohesion, reflecting the high degree of conceptual and empirical interdependence among its constituent studies. For example, the multilevel analysis of neighborhood collective efficacy by Sampson et al. provides a micro level mechanism through which income inequality and social disorganization translate into violence and poor health, complementing the macro level analyses of inequality and mortality by Lynch et al. and Kawachi et al. (Sampson et al., 1997; Kawachi et al., 1997).

Surrounding this core is a second cluster focused on neighborhood context, mental health, and quality of life.

Studies by Aneshensel and Sucoff, Echeverria et al., and van Dyck et al. extend the inequality health nexus into the lived environments of individuals, showing how social cohesion and physical surroundings mediate the effects of socioeconomic disadvantage on psychological well being and behavior (Aneshensel and Sucoff, 1996; Echeverria et al., 2008; van Dyck et al., 2015). This cluster is closely linked to the core inequality health cluster, indicating a high degree of thematic integration.

A third cluster centers on broader sociopolitical and structural interpretations of inequality, particularly those associated with neoliberalism and class. Coburn's work stands out in this cluster, arguing that income inequality is not merely a distributional outcome but a product of political and institutional arrangements that prioritize market logic over social solidarity (Coburn, 2000; Coburn, 2004). Rose's analysis of the changing nature of government and the decline of the social further situates these processes within a broader transformation of governance (Rose, 1996). This cluster is connected to the core but is somewhat more peripheral in terms of citation prominence, reflecting the tendency of health oriented research to dominate the field.

A fourth cluster encompasses urban and regional inequality, including studies of segregation in European cities and regional disparities across Europe. Musterd et al. and Iammarino et al. provide empirical and theoretical frameworks for understanding how spatial inequality reinforces social fragmentation and unequal life chances (Musterd et al., 2017; Iammarino et al., 2019). Kearns and Forrest and Novy et al. contribute conceptual analyses of social cohesion in urban governance, linking spatial and institutional dimensions of inequality (Kearns and Forrest, 2000; Novy et al., 2012). This cluster bridges the sociopolitical and neighborhood level analyses.

A fifth cluster revolves around psychological and cultural dimensions of social class and community. Manstead's work on the psychology of social class highlights how socioeconomic status shapes cognition, emotion, and behavior, providing micro level insights that complement structural analyses (Manstead, 2018). Schouten and McAlexander's ethnography of consumption subcultures illustrates how identity and belonging are constructed within specific social groups, adding a cultural dimension to the study of cohesion (Schouten and McAlexander, 1995).

Parallel to these substantive clusters is a methodological and epistemological cluster focused on bibliometrics and

scientific evaluation. This includes foundational works on citation analysis, impact metrics, and visualization, such as those by Hirsch, Meho, van Eck and Waltman, Marshakova Shaikevich, and Kaur and colleagues (Hirsch, 2005; Meho, 2006; van Eck and Waltman, 2010; Marshakova Shaikevich, 2005; Kaur et al., 2013). These studies form a tightly connected network that provides the tools and concepts used to analyze the rest of the field.

The intersection of the substantive and bibliometric clusters reveals important patterns. Health oriented studies of inequality and cohesion tend to have higher citation visibility, reflecting their alignment with dominant funding priorities and policy agendas (Huffman et al., 2013). In contrast, critical political economy perspectives, while theoretically influential, occupy a more peripheral position in the citation network, illustrating how certain forms of critique are marginalized within mainstream scientific evaluation systems (Jonkers and Derrick, 2012).

Global disparities are also evident in the structure of the network. High income countries, as defined by the World Bank, dominate the production and citation of research on inequality and social cohesion, even though lower and middle income regions experience some of the most severe forms of social and health inequality (World Bank, 2021; Huffman et al., 2013). This asymmetry suggests that the scientific mapping of inequality reflects and reproduces global power relations.

4. Discussion

The bibliometric structure revealed by this analysis has profound theoretical and political implications. At a theoretical level, the dominance of psychosocial and health oriented models of inequality reflects a particular understanding of how social problems should be framed. By focusing on trust, stress, and individual well being, these models align closely with the operational logics of public health and policy evaluation, which prioritize measurable outcomes and intervention strategies (Kawachi and Kennedy, 1999; Hartig et al., 2014). While these approaches have generated important insights, they can obscure the deeper structural and political roots of inequality emphasized by scholars such as Coburn and Rose (Coburn, 2000; Rose, 1996).

The peripheral position of political economy perspectives in the citation network suggests that critiques of neoliberalism and class are less institutionally rewarded than studies that fit within established epidemiological and psychological paradigms. This pattern reflects broader trends in the

governance of science, where funding agencies and high impact journals often favor research that promises actionable, technocratic solutions over work that challenges underlying power structures (Brennan and Naidoo, 2008).

From a bibliometric perspective, this asymmetry illustrates how citation networks function as mechanisms of symbolic power. High citation counts and central network positions confer legitimacy, attracting further attention and resources, while peripheral work struggles to gain visibility regardless of its theoretical importance (Hirsch, 2005; Kaur et al., 2012). In this sense, the bibliometric map of inequality research mirrors the very inequalities it seeks to understand.

The global dimension of these patterns further reinforces this interpretation. Researchers and institutions in high income countries are more likely to have access to major databases, funding, and international collaboration networks, giving their work greater visibility and impact (InCites, 2015; Huffman et al., 2013). As a result, the experiences and perspectives of lower income regions are underrepresented, even in a field explicitly concerned with inequality.

This has important implications for the study of social cohesion. Concepts such as collective efficacy, social capital, and neighborhood trust are often operationalized using measures developed in specific cultural and institutional contexts, particularly in North America and Western Europe (Sampson et al., 1997; Kawachi et al., 1997). When these concepts are exported to other settings without sufficient adaptation, they may fail to capture local forms of solidarity and social organization.

Bibliometric visualization, as implemented in VOSviewer, offers a way to make these patterns visible and thus open to critique (van Eck and Waltman, 2014). By showing which theories, methods, and regions occupy central or peripheral positions, such maps can prompt reflexive discussions about whose knowledge counts and why. However, visualization alone is not sufficient. Without a critical theoretical framework, bibliometric tools risk becoming instruments of managerial control rather than tools for democratic knowledge production (Wallin, 2005; Meho, 2006).

Future research should therefore combine bibliometric analysis with substantive theory to explore how alternative models of inequality and cohesion might gain greater visibility. This could involve promoting interdisciplinary collaboration, supporting research in underrepresented regions, and developing evaluation metrics that value theoretical innovation and social relevance alongside

citation counts (Kaur et al., 2013; Jonkers and Derrick, 2012).

5. Conclusion

This article has demonstrated that the scientific study of inequality and social cohesion is itself structured by networks of citation, collaboration, and institutional power. By applying the principles of bibliometric mapping to a rich corpus of substantive research, it has shown how certain theories and perspectives become central while others remain marginal. The dominance of health oriented and psychosocial models reflects both their empirical utility and their alignment with prevailing systems of scientific evaluation, while critical political economy perspectives face greater challenges in achieving visibility.

At the same time, the analysis has revealed the global inequalities embedded in the production of knowledge about inequality. High income countries and well resourced institutions dominate citation networks, shaping the conceptual frameworks through which social problems are understood. Recognizing these patterns is a crucial step toward building a more inclusive and reflexive science of social cohesion.

Ultimately, bibliometric visualization is not merely a technical tool but a window into the social organization of knowledge. When used critically, it can help scholars and policymakers see how intellectual landscapes are shaped by power, inequality, and institutional incentives. In a world marked by growing social fragmentation, such reflexive understanding is essential for building research agendas that genuinely support social cohesion and collective well being.

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