Protocol for a Systematic Literature Review on the Impact of Neighborhoods on Educational Outcomes

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Abstract: In the last three decades, there has been growing interest in understanding how neighborhoods influence residents' life prospects, extending beyond their individual traits. Various outcomes such as educational achievement, dropout rates, social exclusion, health, and behavioral issues have been explored through systematic literature reviews. However, establishing a direct cause-and-effect relationship between neighborhoods and these outcomes has proven challenging, given that most studies are correlational and lack robust causal evidence. This paper aims to outline the protocol and theoretical framework for a systematic literature review (SLR) to be conducted on Scopus in June 2024, focusing on synthesizing recent literature (2012 to present) on neighborhood-related factors and their impact on educational outcomes. Each article's sample size, age distribution, gender composition, context, methodology, and treatment of the "neighborhood" construct will be recorded. The SLR intends to integrate evidence from various studies to assess the level of causality reported, offering insights for reinterpretation and theoretical evaluation. The proposed SLR will be used as a means of linking studies' evidence that examine neighbourhood effects on educational outcomes. The results of this procedure will be (re)considered for reinterpretation and interconnection purposes in order to theoretically evaluate the degree of causality these studies report.

1. Introduction

Over the past 30 years, an increasing interest has arisen, pertinent to the effects that neighbourhood might have on its residents' life potential that goes beyond any possible effect that their individual characteristics might have [1-7]. It is often suggested that it may be the low socioeconomic status of the family during childhood that acts as the main culprit accounting for an individual's chances of reaching their full potential, due to the lack of exposure to the necessary resources that may involve cognitively stimulating learning materials, such as recreational activities, educational visits etc.[8].The magnitude of the effect might also be affected by the presence of negative life events (e.g., family dissolution, loss of employment) and the exposure to risk factors (e.g., household crowding, presence of a mentally ill parent)[9].

However, more and more researchers focus on the possible causal effect that one's

neighbourhood might have on their life and educational outcomes in particular (academic achievement, school performance, college attainment etc.)[10]. There have been several suggestions regarding the underlying mechanisms that may be put in motion within neighbourhoods[11-13] Different scholars have suggested several distinct theoretical conceptualizations. Sampson contends that there is a "family" of neighbourhood effects on the individual, that are considerably widespread; neighbourhood needs to be seen both as a cause and as a consequence, as an outcome as well as a producer[13]. He goes on to outline ten principles for the analysis of the neighbourhood effects. He focuses on the importance of structural change within a neighbourhood and its context, especially related to neighborhood inequality and social differentiation, the importance of studying neighborhood-level variations using systematic methods of data collection; the need to take into consideration city life mechanisms that are social-interactional, social-psychological, organizational, and cultural not just of the neighbourhood but of the city as whole, instead of only focusing on individual characteristics; the need to take into account neighborhood social reproduction and cultural continuity. Last but not least, he also emphasises on the need to develop implications for community-level interventions.

Galster[4] contends that there are 15 underlying causal mechanisms that can be grouped into 4 categories, namely: social interactive, environmental, geographical and institutional mechanisms that may drive causal relationships. Manski divided them into three categories: endogenous, exogenous and correlated[14], Leventhal and Brooks-Gun into institutional resources, relationships and norms/collective efficacy[9] while Ellen and Turner into concentration, location socialisation, physical and services[15]. According to Leventhal and Brooks-Gunn deprivation at the level of community is directly linked to parenting and child outcomes in terms of health, education, abuse, neglect and a wide spectrum of adolescent outcomes[9]. Neighbourhood deprivation has also been approached as a matter of social address, as Bronfenbrenner states, that needs to be further analysed in order to shed light on the potential interrelation between neighbourhood and educational outcomes[16-17]. The models exhibit similarities in that there is an emphasis on the availability of diverse opportunities and socialisation processes in different socioeconomic levels[9]. The more opportunities, educational and financial resources, the presence of role models, the more enhanced the potential of an individual to thrive later on in life is[9]. On the contrary, fewer opportunities account for an increased possibility of risk. However, individual differences cannot be disregarded as they also play a crucial role in determining an individual's development that is not a mere passive exposure to experience but an active construct[16].

Several neighbourhood aspects have been used to explain discrepancies observed in individuals' developmental and subsequent educational outcomes[12]. However, a causal relationship between the neighbourhood and its potential effects seems hard to determine as most relevant studies are correlational and fail to provide a robust causal relationship[7]. Regardless of the aforementioned debate, consensus has been reached in that neighbourhood boasts some causal pathways to individual outcomes and the following mechanisms have been suggested to form a consensual approach to neighbourhood effects[18].

Previous systematic reviews have attempted to synthesize the literature on neighborhood effects, but gaps remain, particularly regarding recent studies and methodological considerations[10].The most recent systematic review by Nieuwenhuis and Hooimeijer analysed 88 studies using data from 1960 to 2011 employing meta-regression taking the neighbourhood variables coefficients from the original studies and used them as the dependent variable in a new regression identifying the overall effect sizes of different neighbourhood related characteristics. Furthermore, they developed hypotheses regarding a range of study characteristics and tested how they influence the results of the studies in question. However, it has been over 10 years since the last review and the literature has expanded considerably since then, hence new studies need to be accounted for.

This protocol paper describes the systematic review methods that will be used to identify and analyze relevant studies. The development of a protocol prior to the review undertaking is a systematic approach that provides clarity regarding the methodological decisions that are to be made and the necessary enhancement to the review's trustworthiness and integrity[20]. It is a structured framework for conducting a thorough and unbiased review of existing literature. It outlines clear methodologies, search strategies, and inclusion criteria, ensuring consistency and transparency throughout the process. By explicitly defining search terms, selection criteria, and data extraction procedures, a protocol helps minimize researcher bias. This ensures that the review process is systematic, objective, and reproducible, enhancing the credibility and reliability of the findings. Protocols facilitate comprehensive coverage of relevant literature by delineating specific databases, sources, and keywords to be searched. This reduces the likelihood of overlooking important studies, thus providing a more complete understanding of the research landscape. It also allows researchers to identify gaps and inconsistencies in the existing literature. By systematically synthesizing findings across studies, researchers can pinpoint areas where further research is needed, thereby guiding future research directions and contributing to knowledge advancement. The quality of the review process is also ensured by establishing criteria for assessing the methodological rigor of included studies. This allows researchers to critically evaluate the validity and reliability of the evidence, enhancing the robustness of the review findings while also promoting transparency by clearly documenting the review process, including search strategies, selection criteria, and data extraction procedures. This transparency facilitates the reproducibility of the review, allowing other researchers to replicate the study and verify its findings. While developing a systematic literature review protocol requires initial investment in time and effort, it ultimately saves time and resources by streamlining the review process. By providing a roadmap for conducting the review, protocols help researchers focus their efforts efficiently and avoid redundant work. In summary, developing a systematic literature review protocol is essential for conducting rigorous, transparent, and comprehensive reviews of existing literature. By minimizing bias, enhancing transparency, and guiding evidence-based decision making, protocols serve as invaluable tools for advancing knowledge, informing practice, and driving research agendas forward.

The aim of the proposed systematic literature review is to synthesize and evaluate the relevant studies as well as to deepen our understanding of potential associations between neighbourhood characteristics and educational outcomes and, if identified, whether this association varies by place, population, or other characteristics.

The proposed systematic literature review will be guided by the following research questions:

1) How is the construct 'neighbourhood' contextualized in studies that study its effects on educational outcomes?

2) What kind of 'educational outcomes' are related to the effects that the exposure to one's surroundings might have?

3) What kind of relationship can be established between neighbourhood effects and educational outcomes?

The proposed review will contribute to the scientific literature by providing an updated synthesis of recent studies and methodological considerations in the field of neighborhood effects on educational outcomes. By systematically evaluating the evidence and identifying gaps in knowledge, the review aims to inform future research directions and policy interventions aimed at addressing educational disparities.

Overall, this systematic literature review protocol aims to deepen our understanding of the complex relationship between neighborhoods and educational outcomes, providing valuable insights for researchers, policymakers, and practitioners working in the fields of education and urban planning.

2. Methods

2.1. Search Strategy

Eligibility criteria are based on the research questions proposed for this systematic review. For the purposes of identifying relevant studies, the SCOPUS Database will be used. Additionally, the lists of references of the identified articles will be hand-searched for other relevant studies[19-20]. The search is to be conducted in June 2024. The time frame is set from 2012 to June 2024. The search query is developed using the Population, Exposure, Outcomes (PEO) framework for key word and search term identification. The 'neighbourhood' construct includes the following: neighb*rhood or 'community characteristic*' or 'catchment area' or 'residen* characteristic*' or 'environment* characteristic*' or 'context* characteristic*'. 'Education' included the following: 'education*' or 'school' or 'grade*' or 'drop*out' or 'drop out' or 'academic*' or 'education* outcome'. The asterisk symbol is used to allow for all variants of the search term. For all constructs, the query requires at least one of the search terms to be present in the title, abstract, or in the keywords of the study. Filters are used to limit the results to studies published in the English language, in peer-reviewed journals only. The search will not be limited by study design as a more inclusive view of the research is necessary; quantitative, qualitative and mixed-methods design studies will be included. The research aim of the studies must focus on potential educational outcomes related to neighbourhood effects.

2.2. Study screening and selection

Titles and abstracts of studies that will be retrieved using the search strategy will be screened by the reviewer to identify studies that potentially meet the inclusion criteria outlined above. The full text of these potentially eligible studies will be retrieved and independently assessed for eligibility. Any disagreement over the eligibility of particular studies will be resolved through discussion with a second review author. Full texts of the studies will then be retrieved and these papers will be further assessed against the eligibility criteria. The process will be depicted using the PRISMA flow diagram.

2.3. Data Extraction, Synthesis and Quality Assessment

Several approaches for standardization purposes have been proposed when conducting systematic reviews. These offer the necessary tools to ensure clarity and review integrity. The present systematic literature review will employ the PRISMA-P Statement for reporting purposes (Moher et al., 2015). The PRISMA Statement comprises a 27-item checklist and a flow diagram consisting of four phases that enhances the clarity and standardization of the final reporting. The PRISMA checklist addresses important aspects of the systematic review, including the title, abstract, methods, results, discussion, and funding. The PRISMA flow diagram can also be used to clarify the information flow by depicting the different phases of systematic review and shows the number of articles identified, screened, found eligible, and included. From each article, the following elements are to be recorded: sample size, sample age, sample gender composition, context (date & location), theoretical framework, method, aspects of the constructs 'neighbourhood' and 'educational outcomes', their position as a variable as well as the studies' key findings. Missing data will be requested from study authors via email.

The included study results will be synthesized based on the set review questions and will be grouped according to the following characteristics. Their pertinence to the review questions, the target population characteristics e.g. sample size, age, gender, ethnicity, socioeconomic status

and/or education level, low/middle/high income country setting (classified according to the World Bank List of Economies) where applicable; the method and theoretical framework used. The data extracted will then be analyzed using thematic analysis techniques[21], so that the themes that arise from the data can be identified while enabling higher order thinking and synthesizing potentially leading to theory development.

The studies will then be subsequently evaluated. Since the research studies that will be identified will not limited by study design, it is imperative that a standardized tool be used for purposes of evaluation. Although the use of different tools for diverse research methods might enhance the level of rigorous evaluation of these studies, however, they do not allow for an overall assessment of a specific body of work as the criteria and the scoring rubrics might differ substantially. Hence, the Quality Assessment Tool for Studies with Diverse Designs (QATSDD) is employed as it is deemed to be appropriate for studies of psychology and sociology[22]. The tool comprises 16-item criteria-based rubric with a four-point scale and the accompanying specifications so that the researchers can make use of the scoring criteria in a standardized way. Examples include: 'rationale for choice of data collection tool'; 'strengths and limitations critically discussed'; 'good justification for analytical method selected' etc. Both the validity and reliability of the tool have been evaluated and have been found to be appropriate[22]. The sum of the score a paper receives provides a comprehensive idea of the quality of the paper and the sum of all scores can provide an overall score for the whole body of work under review.

3. Conclusion

In conclusion, the systematic literature review protocol outlined herein provides a structured approach to investigate the complex interplay between neighbourhood effects and educational outcomes. By employing rigorous methodologies and comprehensive search strategies, this protocol aims to synthesize existing research, identify gaps in the literature, and offer insights into the mechanisms through which neighbourhood characteristics influence educational attainment. Ultimately, this endeavor seeks to contribute to a deeper understanding of the factors shaping educational disparities and inform the development of targeted interventions to promote equitable outcomes for all students, regardless of their neighbourhood context. Through the systematic review process, we anticipate shedding light on key determinants, potential pathways, and policy implications, thereby advancing both theoretical understanding and practical applications in the field of education and social studies.

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