

# Midwest Ecological Study Outlined the Neighbourhood Literacy Environment and the Inequitable Access Children Have to Books in Public Library Branches

Crosh, C., Hutton, J., Szumlas, G., Xu, Y., Beck, A., & Riley, C. (2022). Inequities in public library branch access and children's book circulation in a Midwestern American city. *The International Journal of Information, Diversity, & Inclusion (IJIDI)*, 6(3), 68-81. <https://doi.org/10.33137/ijidi.v6i4.38127>

Nandi Prince

Volume 18, numéro 1, 2023

URI : <https://id.erudit.org/iderudit/1098890ar>

DOI : <https://doi.org/10.18438/ebliip30290>

[Aller au sommaire du numéro](#)

Éditeur(s)

University of Alberta Library

ISSN

1715-720X (numérique)

[Découvrir la revue](#)

Citer ce compte rendu

Prince, N. (2023). Compte rendu de [Midwest Ecological Study Outlined the Neighbourhood Literacy Environment and the Inequitable Access Children Have to Books in Public Library Branches / Crosh, C., Hutton, J., Szumlas, G., Xu, Y., Beck, A., & Riley, C. (2022). Inequities in public library branch access and children's book circulation in a Midwestern American city. *The International Journal of Information, Diversity, & Inclusion (IJIDI)*, 6(3), 68-81. <https://doi.org/10.33137/ijidi.v6i4.38127>]. *Evidence Based Library and Information Practice*, 18(1), 130-133. <https://doi.org/10.18438/ebliip30290>

Résumé de l'article

**Objective** – To explore the impact of the neighbourhood literacy environment (NLE) by examining associations between public library locations, book circulation rates, and neighbourhood racial composition.

**Design** – An ecological study using aggregated data sources.

**Setting** – Forty selected neighbourhood public libraries in the state of Ohio, United States of America.

**Subjects** – Analysis of (1) existing circulation statistics from January 2014 to December 2018 for the neighbourhoods of Cincinnati and Hamilton Public Libraries; and (2) the American Community Survey (ACS) data from 2018.

**Methods** – Among the key components studied for the population was the NLE, which the authors defined as access to literacy materials in a neighbourhood. The data the authors examined for the targeted populations were race, age, poverty level, and library location. The two groups of variables computed were: (1) the connection between circulation rates of children's books and child poverty; (2) the connection between circulation statistics and the proportion of people who self-identify as Black in the neighbourhood. Additionally, the researchers used the Spearman's rank order correlation coefficient (rs) to measure the relationships between the correlating variables within each neighbourhood library branch – number of books circulated per child; the census data of children who self-identified as Black; and the children who were designated as 20% below the federal poverty level (FPL). The Chi-square test was used to calculate associations between access to a library branch and child poverty in each neighborhood. In this study, the researchers only looked at the associations between variables at an aggregate level. The authors defined the terms they used in the study: (1) children were ages 0-18 years; (2) children's books were literature intended for an audience from 0-18 years old; (3) the definition of poverty was taken from the U.S. Census and classified as neighborhoods with 20% of children below the FPL.

**Main Results** – There were 40 library branches that served 81 neighbourhoods, of which there was only a 38% distribution in the high-poverty areas, compared with 58% for the low. Approximately 24 million books were circulated during the 5-year period of 2014-2018. The median circulation rate per child at the neighbourhood level was 22 books. The results showed steep variations in circulation rates per child across branch locations; the numbers range from 3 to 98 books per child across neighborhoods. The authors indicated that the increases and decreases in the circulation rates were tied to branch location and the area's socioeconomic status. The primary finding of the data analyzed was a negative correlation between the population identified as Black/African American and lower circulation rates in poorer neighbourhoods.

**Limitations** identified by the authors were (1) the allocation of literacy resources per branch was unknown; (2) the in-library book user statistics in high-poverty neighbourhoods may not be accurately documented; (3) the precise allocations for literacy funds and the use of in-library resources for developing literacy skills need further study.

**Conclusion** – The authors noted that race, economic status, and proximity to public libraries were pertinent factors in understanding inequitable access to books for children in the neighbourhoods studied. The NLE was an important dynamic beyond the home; the availability of books and engagement with them were contributing factors to the development of literacy skills. The associations observed between the variables indicated that improving the NLE matters and libraries must mindfully work to alleviate the disproportionately lower levels of access to books and their unfavorable outcome for children in low-income areas.

© Nandi Prince, 2023



Ce document est protégé par la loi sur le droit d'auteur. L'utilisation des services d'Érudit (y compris la reproduction) est assujettie à sa politique d'utilisation que vous pouvez consulter en ligne.

<https://apropos.erudit.org/fr/usagers/politique-dutilisation/>



*Evidence Summary*

**Midwest Ecological Study Outlined the Neighbourhood Literacy Environment and the Inequitable Access Children Have to Books in Public Library Branches**

**A Review of:**

Crosh, C., Hutton, J., Szumlas, G., Xu, Y., Beck, A., & Riley, C. (2022). Inequities in public library branch access and children's book circulation in a Midwestern American city. *The International Journal of Information, Diversity, & Inclusion (IJIDI)*, 6(3), 68-81.  
<https://doi.org/10.33137/ijidi.v6i4.38127>

**Reviewed by:**

Nandi Prince  
Assistant Professor  
Ursula C. Schwerin Library  
New York City College of Technology  
New York, New York, United States of America  
Email: [NPrince@citytech.cuny.edu](mailto:NPrince@citytech.cuny.edu)

**Received:** 9 Dec. 2022

**Accepted:** 2 Feb. 2023

© 2023 Prince. This is an Open Access article distributed under the terms of the Creative Commons-Attribution-Noncommercial-Share Alike License 4.0 International (<http://creativecommons.org/licenses/by-nc-sa/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly attributed, not used for commercial purposes, and, if transformed, the resulting work is redistributed under the same or similar license to this one.

DOI: [10.18438/ebliip30290](https://doi.org/10.18438/ebliip30290)

---

**Abstract**

**Objective** – To explore the impact of the neighbourhood literacy environment (NLE) by examining associations between public library locations, book circulation rates, and neighbourhood racial composition.

**Design** – An ecological study using aggregated data sources.

**Setting** – Forty selected neighbourhood public libraries in the state of Ohio, United States of America.

**Subjects** – Analysis of (1) existing circulation statistics from January 2014 to December 2018 for the neighbourhoods of Cincinnati and Hamilton Public Libraries; and (2) the American Community Survey (ACS) data from 2018.

**Methods** – Among the key components studied for the population was the NLE, which the authors defined as access to literacy materials in a neighbourhood. The data the authors examined for the targeted populations were race, age, poverty level, and library location. The two groups of variables computed were: (1) the connection between circulation rates of children’s books and child poverty; (2) the connection between circulation statistics and the proportion of people who self-identify as Black in the neighbourhood. Additionally, the researchers used the Spearman’s rank order correlation coefficient ( $r_s$ ) to measure the relationships between the correlating variables within each neighbourhood library branch – number of books circulated per child; the census data of children who self-identified as Black; and the children who were designated as 20% below the federal poverty level (FPL). The Chi-square test was used to calculate associations between access to a library branch and child poverty in each neighborhood. In this study, the researchers only looked at the associations between variables at an aggregate level. The authors defined the terms they used in the study: (1) children were ages 0-18 years; (2) children’s books were literature intended for an audience from 0-18 years old; (3) the definition of poverty was taken from the U.S. Census and classified as neighborhoods with 20% of children below the FPL.

**Main Results** – There were 40 library branches that served 81 neighbourhoods, of which there was only a 38% distribution in the high-poverty areas, compared with 58% for the low. Approximately 24 million books were circulated during the 5-year period of 2014 -2018. The median circulation rate per child at the neighbourhood level was 22 books. The results showed steep variations in circulation rates per child across branch locations; the numbers range from 3 to 98 books per child across neighborhoods. The authors indicated that the increases and decreases in the circulation rates were tied to branch location and the area’s socioeconomic status. The primary finding of the data analyzed was a negative correlation between the population identified as Black/African American and lower circulation rates in poorer neighbourhoods.

Limitations identified by the authors were (1) the allocation of literacy resources per branch was unknown; (2) the in-library book user statistics in high-poverty neighbourhoods may not be accurately documented; (3) the precise allocations for literacy funds and the use of in-library resources for developing literacy skills need further study.

**Conclusion** – The authors noted that race, economic status, and proximity to public libraries were pertinent factors in understanding inequitable access to books for children in the neighbourhoods studied. The NLE was an important dynamic beyond the home; the availability of books and engagement with them were contributing factors to the development of literacy skills. The associations observed between the variables indicated that improving the NLE matters and libraries must mindfully work to alleviate the disproportionately lower levels of access to books and their unfavorable outcome for children in low-income areas.

### **Commentary**

This study added to the existing literature on associations between poverty and access to literacy resources (e.g., Neuman & Celano, 2001; Neuman & Molan, 2016). Based on the evidence of the circulated books-to-child ratio and the various data components studied (library location, poverty, and race), the NLE was a significant determinant to the literacy development of children. Branch libraries are part of their environment and therefore warrant the statistical analysis completed by the authors.

After evaluating the study with the CriSTaL Checklist for Appraising a User Study (Booth, 2010), the generalizability to age group, location, and race applied by the researchers were assessed as appropriate for a population level study. This checklist also highlighted the strengths of the study: the authors’ clearly stated aims, the population size selected, the variables of the data collected, and the reproducibility of the methods.

The researchers outlined their hypothesis and the specific variables they used to understand the problem: (1) by making statistical comparisons of the aggregate circulation statistics of children's books between branches to determine; (2) what connections exist because of the area's economic status; and (3) what institutional partnerships and legislative acts can be made to the current structure to improve the studied population's access to books. Spearman's correlation coefficient was a good choice because it ranked the dissimilar data of this population study. It displays the monotonic relationship, when one variable changes, as in high and low-poverty neighbourhoods. An examination of the high and low-poverty neighbourhoods reflected that the low-poverty residents had more libraries available to them. Those statistics should be the reverse because low-poverty residents had more options available to them, including the income to purchase books and additional libraries from which to obtain free library books. Additionally, the 3:98 ratio of circulated books in low to high-poverty neighbourhoods was a daunting statistic because the difference is 33-fold. The authors suggested that populations with lower circulation figures had access to under-resourced libraries.

There was inherent bias in the census data that was used for the study. The historical legacy of racial and ethnic identities in American society is complex and fraught with problems. Implicit in the linear timeline, and the numbers from their computation of the variables, race and poverty contributed to the decisions of where the 40 libraries were placed in Cincinnati going as far back as the late 1800's. While this study focused on the number of Black people who self-identified based on information obtained from ACS, a subset of the U.S. Census, future researchers may want to address how the Census measures race and ethnicity of Hispanics and of other ethno-racial categorizations of population groups. Additionally, the methods section stated that the ACS data were produced annually, but there was no explanation given as to why only the 2018 data (Crosh et al., 2022, p. 71) was applied to the circulation statistics of 2014 through 2018. It is worth extending this study because population level data were only partially informative as they lacked the accuracy of data at an individual level (Grimes & Schulz, 2002). The aforementioned concerns did not overshadow the usefulness of this study, however, because it highlighted important findings that stakeholders and legislators should implement to eliminate the negative impacts of income inequality on the literacy development of Black children. Other library systems may also use this methodology to analyze their circulation data and better advocate for the economically disadvantaged children who are most reliant on services provided by public libraries to advance their literacy development. Additionally, the results that showed decreased exposure for said population to resources that are cognitively enriching were at odds with the basic tenets of the Library Bill of Rights. The study's usefulness may also influence state and local government officials to redistribute resources to libraries that were underfunded in areas with a high concentration of Black children. The data will be instrumental in brainstorming solutions for the continuous and complex problems facing neighbourhood branches.

## References

- Booth, A. (2010). *CriSTaL checklist for appraising a user study*. Netting the Evidence. Retrieved from <http://nettingtheevidence.pbwiki.com/f/use.doc>
- Crosh, C., Hutton, J., Szumlas, G., Xu, Y., Beck, A., & Riley, C. (2022). Inequities in public library branch access and children's book circulation in a Midwestern American city. *The International Journal of Information, Diversity, & Inclusion (IJIDI)*, 6(4), 68-81. <https://doi.org/10.33137/ijidi.v6i4.38127>
- Grimes, D. A., & Schulz, K. F. (2002). Descriptive studies: What they can and cannot do. *The Lancet (British Edition)*, 359(9301), 145-149. [https://doi.org/10.1016/S0140-6736\(02\)07373-7](https://doi.org/10.1016/S0140-6736(02)07373-7)
- Neuman, S. B., & Celano, D. (2001). Access to print in low-income and middle-income communities: An ecological study of four neighborhoods. *Reading Research Quarterly*, 36(1), 8-26. <https://doi.org/10.1598/RRQ.36.1.1>

Neuman, S. B., & Moland, N. (2016). Book deserts: The consequences of income segregation on children's access to print. *Urban Education*, 54(4), 126-147.  
<https://doi.org/10.1177/0042085916654525>