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A Multi-Institutional Examination and Comparison of Core Journal Usage and Holdings

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The purpose of this study is to examine the core journals used by graduate students in doctoral research in sociology at 16 institutions within the Big Ten Academic Alliance (BTAA). Citation studies in dissertations are often limited to exploring core journals based on local or aggregate multi-institutional use and rarely provide metrics for comparing local use within a discipline. Our study explores the nuances of finding core journals based on local priorities and aggregate use in dissertations. It also examines how well each institution supports graduate research by examining the institutional holdings for these core lists.

Introduction

Our study explores journals used by doctoral students in 516 dissertations in sociology from 2016 to 2020 (Woods & Tillman, 2024). The study provides an empirical approach to explore and compare journal use within the discipline of sociology by examining use across 16 institutions (Table 1). This study explores the following research questions:

1. How do we measure core journal use taking into consideration aggregate and local use (CD Rank combine)?

2. What is the strength of the relationship between the core journal list for each institution (CDRank n_institution) and our new measure CDRank combine?
3. What is the strength of the relationship between the core journal list (CDRank n_institution) between institutions?
4. How well do institutions support core journals based on our local and aggregate analysis?

Literature Review

Why is journal use an important topic in librarianship? The topic of journal usage in librarianship is often reduced to practical applications for collection development (Hoffmann & Doucette, 2012) or conversations with academics about journal impact factors (Cronin et al., 1997). This is a mistake since journal use is a topic that should inform our instruction and reference concurrently with our understanding of collections.

Our study's focus on the library collections holdings of high-use journals is certainly important, but it needs to be seen in the broader context of how journal use helps us develop collections. Each journal is a unique publication representing the coalescence of a society of scholars examining complex issues. How journals cluster in a publication provides deeper insights into our general understanding of collection development than simply making sure that we provide our users with high-use journals. For example, a set of dissertations that cites the *Journal of Health and Social Behavior* along with the *American Journal of Sociology* provides evidence of the necessity of building a local collection that supports the impact of health and society. In sum, journal use needs to be seen in the context of how disciplines and programs interact.

Journal use also informs library instruction and reference. Understanding how the scholarly community communicates through a journal has always been essential to librarianship. However, we need to build on this idea to consider how journal clusters inform our instructional approaches as well as our reference services. Generalist librarians need to familiarize themselves with the scope and focus of high-cite journals. Library specialists need to examine closely journals in their subject domains as well as journals that cluster outside of their subject areas. In sum, the journal use relationship provides deeper insight into topics our users are exploring informing our reference and instruction.

Journal Use Studies in Sociology

Journal use studies in sociology have been conducted through user surveys of academics (Glenn, 1971; Satariano, 1978) and citation studies from journals (Bayer, 1982; Broadus, 1967; Brown & Gilmartin, 1969; Lin & Nelson, 1969), as well as citation analysis of indexes (Baughman, 1974). Bibliometric studies of journal use in dissertations in sociology fall into one of three categories multidisciplinary studies (Afful & Janks, 2013; Burrows et al., 2019; Rosenberg, 2015; Thoidingjam, 1994; Ucak & Al, 2009), multi-institutional comparisons (Zafrunnisha, 2012), or studies of individual institutions (Gunasekera, 2014; Mahajan & Kumar, 2017; Singh & Bebi, 2013; Woods, 2024).

CDRank

What is CDRank methodology and what is its contribution to the study of journal use? Most citation studies that consider journal use count the number of journal citations for each title and create a list of the most cited journals. The problem with this method is that important journals may only be cited a few times due to the nature of their content. For example, the *American Sociological Review* a seminal publication in sociology may only get cited one or two times in a dissertation but will most likely be cited in every dissertation in sociology. Another issue is when a subject specific journal is cited several times in a single dissertation and not cited in others, creating a disproportional

representation of use. CDRank is a measure created to give equal weight to the number of citations [C] and dissertation [D] citing a journal as a measure to explore journal use.

Beyond equalizing counts, the CDRank also provides a mechanism for exploring the strength of the relationship (correlation) between institutions, disciplines, and programs. Why is this important? Graduate research in sociology, like most social science disciplines, is nuanced reflecting the scope and interests of a local institution's faculty. For example, the sociology department at the University of Chicago has a social-historical bent whereas the Pennsylvania State University has a social-demographic emphasis. Concurrently, we can use CDRank and graduate students' journal use to find similarities between institutions to identify peer departments with similar scope and focus. Finally, CDRank also allows us to understand interdisciplinary and programmatic comparisons of journal use within an institution or even in multiple institutions. In sum, sociology as the study of society has many nuances. Do we mean the sociology of religion, education, medicine, popular culture, or crime?

Studies Using CDRank

The first study to use CDRank, (Woods & Russell, 2022) identified and compared three ranked lists of journals from citations in 62 dissertations in rural sociology at Penn State from 2004-2021. The ranked list includes the top 31 journals based on: number of citations (CitRank), number of dissertations citing the journal (DissRank), and the average combined rank of citation counts and dissertation counts (CDRank). The study identifies 43 unique journals across all three ranking methods and identifies seven general journal clusters: rural studies, sociology, agriculture, development, natural resources and environment, health, demography and geography, and general social sciences.

The first CDRank study (Woods & Russell, 2023) to compare journal use between institutions uses text mining to extract and examine citations in dissertations in rural sociology at Cornell, Penn State, and Auburn. For each institution, a CDRank list was created and nonparametric measure Kendall tau b was conducted to examine the correlations or similarity between each institution's core lists based on CDRank. The high-use journals from Penn State and Cornell were more similar than those between Penn State and Auburn. Woods (2024) followed up this study by examining journal use in sociology exploring programmatic comparisons within a single institution.

Finally, Woods (2023) conducted a multi-institutional study of journal use in the sociology of religion by examining citations in a subset of sociology dissertations from institutions in the BTAA 2016-2020. This was done by examining CDRank of journals used in the set of sociology dissertations that cited the *Journal of the Scientific Study of Religion, Review of Religious Research* along with the *Journal Sociology of Religion*.

Methodologically, our current study is a further examination of how to use CDRank to explore journal use related to multi-institutional relationships. Its method differs from the earlier study that compared CDRank lists from Cornell, Auburn, and Penn State in rural sociology. Our study simply adds a third variable (cited at an institution) to give added weight to a journal title. The method is explained below.

Method

Five hundred and eighteen dissertations in sociology from 2016-2020 were identified, extracted, and coded from ProQuest's Dissertations & Theses @ CIC Institution database, BTAA institutional repositories, and department websites. There were 37 dissertations under embargo that are not included in this study, although attempts were made to contact individual researchers (Table 1). Northwestern University (12) and the University of Maryland (14) had the highest number of dissertations under embargo at the time of this study. The number of dissertations produced by institutions during this timeframe ranges from the high of 59 at the University of Chicago to nine at the University of Iowa (Table 1).

Table 1

Dissertations Examined by Institution

Institution	Total	Embargoed
Indiana University (IU)	43	1
Michigan State University (MSU)	31	0
Northwestern University (NU)	47	12
Ohio State University (OU)	33	0
Pennsylvania State University (PSU)	41	0
Purdue University (PU)	16	0
Rutgers University (RUTG)	15	2
University of Chicago (UC)	59	3
University of Illinois Chicago (UIC)	29	1
University of Illinois Champaign Urbana (UICU)	14	1
University of Iowa (UI)	9	1
University of Maryland (MD)	30	14
University of Michigan (MI)	48	0
University of Minnesota (MN)	27	0
University of Nebraska (NE)	21	0
University of Wisconsin (WI)	55	2
Total	518	37

Data & Coding

A spreadsheet was created extracting metadata for each dissertation that includes title, author, graduate program, core areas, date of defense, dissertation advisor, committee members, keywords (from the database), abstract, and ETD_ID. The ETD_ID serves as the key variable.

Citations (105,652) were extracted from PDFs and placed into a second spreadsheet, analyzed, and coded into three material types (journal, monograph, and other). Word documents were derived from PDFs so that bibliographic information could be copied into a text file. The text file was coded to identify the parts of the citation and then exported

into a spreadsheet for further analysis and coding. Dissertations with multiple bibliographies were copied into a single text file and duplicate citations were removed using Excel. Table 2 provides a breakdown by institution for the number of citations, percentage by material type, and the number of journal titles.

Table 2

Percentage of Citations by Document Types and Journal Titles

Institution	Total Cit.	Journals	Monograph	Other	Journal Titles
IU	8,316	65% (5,411)	26%	9%	1,162
MSU	5,906	56% (3,335)	27%	16%	1,168
NU	11,727	43% (5,070)	38%	19%	1,493
OU	5,194	59% (3,045)	25%	17%	831
PSU	6,539	73% (4,763)	16%	11%	1,063
PU	3,359	60% (2,006)	19%	21%	620
RUTG	3,324	63% (2,081)	22%	15%	744
UC	13,756	47% (6,472)	35%	18%	1,627
UIC	5,448	49% (2,658)	36%	15%	831
UICU	2,907	40% (1,154)	40%	20%	550
UI	2,156	57% (1,231)	19%	23%	402
MD	5,261	59% (3,122)	27%	14%	855
MI	9,838	55% (5,402)	31%	14%	1,379
MN	6,626	48% (3,150)	37%	15%	1,019
NE	3,836	76% (2,911)	16%	8%	833
WI	11,459	52% (5,966)	28%	20%	1,496
Total	105,652	55% (55,777)	29%	16%	5,659

A third spreadsheet was created from 57,777 journal citations identified in the second spreadsheet. Each citation was coded to include ETD_ID, author, year, article title, journal, ISSN, doi/url. The ISSN was included to control for journal title variations used by the researchers. The doi/url were left blank if the journal citation did not include them.

Obtaining Library Holdings

The 57,777 citations were condensed to a list of 5,659 distinct journal title/ISSN entries. Holdings data from across the BTAA was then queried to determine the extent to which these journals are held by BTAA institutions. It was first necessary to obtain all representative ISSNs for each journal. The WorldCat Metadata API 2.0 was queried by ISSN and results were processed to identify additional ISSNs. These additional ISSNs were used in subsequent queries. During this process, 25 titles were identified that did not include ISSNs and the list was reduced to 5,634 unique pairings.

Holdings data was obtained from the WorldCat Search API v.2 and Z39.50 services. First, the WorldCat Search API's bibliographic holdings endpoint was queried by ISSN and results limited to a list of OCLC symbols representing the BTAA institutions. However, an institution's WorldCat holdings may not be up-to-date and are unlikely to represent electronic-only items. In the second step, MarcEdit software was used to query each institution's Z39.50 service by ISSN for any of the 5,634 entities not found at that institution during the WorldCat API phase. This combined holdings data was saved to a JSON database.

Finding Core Journals Lists

A set of core journal lists is generated using different forms of CDRank to find the core journal list for each institution as well as the aggregate collection.

- An aggregate list of core journals is generated from an analysis of all journal citations and dissertations (research question one). This core list is referred to throughout the study as CDRank aggregate.
- An institutional list of core journals is generated from an analysis of all journal citations and dissertations from each institution (research question two). These 16 core lists are referred to throughout the study as CDRank n_institution.

To find an analysis that considers both aggregate and local influences a new measure was created. For each journal, the measure CDRank combine is created using CDRank n_institution and CDRank aggregate in the following formula:

CDRank (combine) = ((∑ CD Rank (n_institution) / 16) + CD Rank (aggregate)) / 2

Comparing Core Journals Lists

A comparison between CDRank n_institution journal lists was also conducted to identify the number of shared and unique journal titles (Table 3). The study identifies 37 common journals cited in at least one dissertation by all BTAA institutions (Column #16). Consequently, the decision was made to limit the size of each of our core list to the top 37 titles: CDRank aggregate, CDRank combine, and CDRank n_institution.

Table 3

Number of Shared Journal Titles Cited in Dissertations by Number of BTAA Institutions

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15	#16
Total	3028	870	464	268	204	159	131	96	86	75	61	58	45	41	36	37
IU	186	136	106	70	80	85	63	56	60	60	51	54	42	40	36	37
MSU	296	120	113	76	56	61	62	53	49	49	43	50	36	31	36	37

NU	411	198	145	102	89	80	68	58	59	44	47	45	37	38	35	37
OU	93	72	51	61	56	45	66	45	49	48	49	48	36	39	36	37
PSU	190	113	91	68	76	62	53	55	60	56	41	45	39	41	36	37
PU	72	49	46	31	33	40	44	29	33	40	31	39	33	31	32	37
RUTG	127	72	70	46	51	34	42	33	33	42	30	31	32	32	32	37
UC	431	230	155	110	90	82	73	60	63	62	58	54	45	41	36	37
UIC	101	70	61	69	54	53	57	44	48	41	40	49	38	34	35	37
UICU	101	57	47	31	29	34	30	28	24	20	21	24	22	22	24	37
UI	39	28	20	22	27	17	27	22	24	18	14	23	27	33	24	37
MD	123	72	72	56	53	53	48	45	46	52	41	42	41	38	36	37
MI	247	171	112	97	102	90	85	68	74	66	59	52	43	41	36	37
MN	165	95	106	68	71	66	57	57	45	42	50	50	41	35	34	37
NE	114	81	58	58	56	60	55	47	39	50	38	38	28	38	36	37
WI	332	178	139	107	97	92	87	68	68	60	58	52	45	40	36	37

Our analysis of correlation in this study is based on the 161 unique journal titles from our analysis of the top 37 journal lists: CDRank n_institution for each institution, CDRank aggregate, and CDRank combine. If the journal was not listed in an institution's CDRank n institutional core list, then it was assigned the ranking 999.

A nonparametric measures Kendall tau b was conducted to explore internal congruency between CDRank aggregate and CDRank (combined). This measure demonstrates a strong correlation (.860) based on matched pairs from each list (Gibbons, 1993). A nonparametric measure Kendall tau b was also conducted to examine the correlation between each institution's core lists, CDRank n_institution and the ranked lists based on the aggregate and combined measures (Table 4). The same measure is used for comparison between institutions (Table 5).

Table 4

Correlation Using Kendall's tau_b of Each CDRank (N Institution) Core 37 Journals with Core 37 Journals Identified in the CDRank (Aggregate) and CDRank (Combine) Measures

	CDRank (Aggregate)	**CDRank (Combine)**	**Change (Local Adjustment)**
CD_Rank	-	.860**	
WI_CD	.643**	.634**	-0.009

MI_CD	.658**	.624**	-0.034
UC_CD	.670**	.619**	-0.051
IU_CD	.629**	.613**	-0.016
MD_CD	.583**	.610**	0.027
OU_CD	.599**	.584**	-0.015
PSU_CD	.513**	.522**	0.009
RUTG_CD	.489**	.509**	0.020
MN_CD	.448**	.455**	0.007
UI_CD	.473**	.449**	-0.024
MSU_CD	.391**	.434**	0.043
UIC_CD	.447**	.429**	-0.018
NE_CD	.378**	.403**	0.025
NU_CD	.432**	.392**	-0.040
PUR_CD	.335**	.351**	0.016
UICU_CD	.232**	.300**	0.068

Note: ** Correlation is significant at the 0.01 level (2-tailed).

Table 5

Correlation Using Kendall's tau_b Comparing CDRank (N Institution)

	IU	**MSU**	**NU**	**OU**	**PSU**	**PUR**	**RUTG**	**UC**	**UIC**	**UICU**	**UI**	**MD**	**MI**	**MN**	**NE**
WI	.461**	.321**	.408**	.600**	.390**	.260**	.285**	.506**	.357**	.230**	.405**	.392**	.504**	.440**	.266**
NE	.331**	.254**	.075	.316**	.598**	.510**	.413**	.207**	.046	.041	.226**	.418**	.280**	.085	
MN	.318**	.334**	.436**	.387**	.166**	.113*	.234**	.372**	.421**	.385**	.227**	.299**	.348**		
MI	.511**	.290**	.395**	.443**	.380**	.278**	.448**	.548**	.382**	.157**	.404**	.444**			
MD	.543**	.415**	.177**	.397**	.484**	.307**	.496**	.392**	.318**	.216**	.374**				

UI	.423**	.168**	.357**	.387**	.299**	.082	.243**	.424**	.402**	0.09					
UICU	.155**	.370**	.209**	.174**	.064	.064	.175**	.191**	.278**						
UIC	.376**	.197**	.481**	.327**	.133*	.008	.202**	.430**							
UC	.532**	.212**	.532**	.504**	.341**	.204**	.393**								
RUTG	.384**	.312**	.204**	.261**	.409**	.406**									
PUR	.205**	.303**	.012	.274**	.492**										
PSU	.402**	.306**	.065	.438**											
OU	.456**	.294**	.363**												
NU	.318**	.084													
MSU	.347**														

Note: ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Results

This study identified 5,634 unique journal titles with ISSNs and 27 journal titles where the ISSN could not be identified. Institutional use of journal titles ranges from 1,640 at the University of Chicago to 404 at the University of Iowa (Table 2). PSU dissertations have the highest percentage of journal use (73%) whereas IL/CHP (40%) and NU (43%) have the lowest percentage use. Overall, journals represent 55% of the citations used in BTAA dissertations in sociology.

Finding Core Journals

The core journal lists generated from our CDRank aggregate method (Table 6 & 7) and our new measure CDRank combine method (Table 6) have a strong correlation 0.860 (Table 4) with some variations on ranking priority. Table 7 includes four journals that were ranked in the top 37 CDRank aggregate and the six journals that were cited in at least one dissertation from all institutions but were not listed in the top 37 CDRank combine. The University of Illinois Champaign-Urbana (ILCHP) dissertations do not cite seven of the 37 high-use journals based on CDRank combine (Table 6) and CDRank aggregate (Table 7). Other institutions not citing journals in Table 6 and 7 include: MSU (2) and MN (1), MD (1), and PU (1).

Table 6

Top 37 Core Journal Use by CDRank (combine)

Journal	ISSN	CDRank Aggregate	CDRank Combine	Institution
American Sociological Review	0003-1224	1	1	16

American Journal of Sociology	0002-9602	2	2	16
Annual Review of Sociology	0360-0572	3	3	16
Social Forces	0037-7732	4	4	16
Social Science and Medicine	0277-9536	5	5	16
Social Problems	0037-7791	5	6	16
Journal of Marriage and Family	0022-2445	7	7	16
Demography	0070-3370	7	8	16
Social Science Research	0049-089X	9	9	16
Annals of the American Academy of Political and Social Science	0002-7162	11	10	16
Journal of Health and Social Behavior	0022-1465	10	11	16
Gender and Society	0891-2432	12	12	16
American Journal of Public Health	0090-0036	13	13	16
Sociological Quarterly	0038-0253	18	14	16
Journal of Personality and Social Psychology	0022-3514	16	15	16
Sociological Forum	0884-8971	21	16	16
American Behavioral Scientist	0002-7642	25	17	16
Theory and Society	0304-2421	13	18	16
Science	0036-8075	23	19	16
Sociological Theory	0735-2751	15	20	16
Social Science Quarterly	0038-4941	27	21	16
American Psychologist	0003-066X	27	22	16
American Economic Review	0002-8282	20	23	16
Sociology of Education	0038-0407	18	24	16
Sociological Perspectives	0731-1214	38	25	16

Social Psychology Quarterly	0190-2725	16	26	15
Population and Development Review	0098-7921	32	27	16
Journal of Social Issues	0022-4537	31	28	16
Ethnic and Racial Studies	1466-4356	24	29	15
Journal of Family Issues	0192-513X	29	30	16
American Educational Research Journal	0002-8312	38	31	16
Qualitative Sociology	0162-0436	48	32	16
Sociological Inquiry	0038-0245	60	33	16
Urban Review	0042-0980	43	34	16
Sociology Compass	1751-9020	43	35	15
Sociological Methods and Research	0049-1241	36	36	15
Psychological Science	0956-7976	66	37	16

Table 7

Journals NOT Included in the Top 37 CDRank (Combine) but in the Top 37 CDRank (Aggregate) or Cited at All 16 Institutions.

Journal	ISSN	CDRank Aggregate	CDRank Combine	Institution
Administrative Science Quarterly*	0001-8392	22	52	14
Psychological Bulletin	0033-2909	26	41	14
Journal of Gerontology: Series B Psychological Sciences and Social Sciences*	1079-5014	29	48	15
Child Development*	0009-3920	32	39	15
Criminology*	0011-1384	32	46	14
American Political Science Review*	0003-0554	35	45	15
Proceedings of the National Academy of Sciences*	0027-8424	36	38	15
Sociology of Health and Illness	0141-9889	59	43	16

Sociological Review	0038-0261	62	47	16
Sociology	0038-0385	67	46	16
American Journal of Community Psychology	0091-0562	126	85	16

Note: *In the top 37 CDRank (Aggregate)

New Measure: CDRank Combine

The significant correlation (.860) between CDRank aggregate and CDRank demonstrates the internal consistency of our measure that takes into account institutional use (Table 4). Overall, there is a significant correlation between each institution's CDRank n_institution and the CDRank aggregate and CDRank combine (Table 4). Wisconsin's CDRank n_institution core list has the strongest correlation (.634) and Illinois Champaign-Urbana (.300) the weakest with our CDRank combine measure. The adjustment for local ranking (CDRank combine) shows a stronger correlation for eight institutions, weaker correlation for eight institutions (Table 4, Change).

Essentially, this means that institutions with stronger correlations have similar rank titles in their top 37 journals. Concurrently, those with weaker correlations, the rank titles are different. It has been suggested that the reason these lists are different is based on the scope or focus of the sociology programs at each institution. A data set is available to explore each institution's top 37 CDRank titles (Woods & Tillman, 2024).

Comparing Institutional Core Journals Lists

A comparison of each institution's top 37 CDRank n_institution list (Table 5) shows that Wisconsin and Ohio State have the strongest correlation (.600), and Purdue and Minnesota have the weakest correlation (.113). Nebraska's top 37 has no significant correlation with Northwestern (-.075), the University of Illinois Chicago (.046), University of Illinois Champaign-Urbana (.040), and Minnesota (.085). The University of Illinois Champaign-Urbana also has no significant correlation with four institutions (Nebraska, Iowa, Purdue, and Penn State). The core 37 from the University of Chicago, Maryland, Minnesota, Rutgers, and Wisconsin have significant correlations with all the top 37 CDRank n-institution from every institution.

As stated earlier, institutions with a strong correlation have similar ranked titles lists. Those with weaker correlations have lists that do not correspond as well. Further exploration as to why this is happening needs to be done. Again, it has been suggested that journals serve as subject markers for the focus of research at each institution.

Library Holdings

Of the top 37 journals by CDRank combine, all were held in some format at all 16 institutions. Each institution also held its own top 37 journals by CDRank n_institution. Across an aggregate list of each institution's top 37 journals, a total of 161 journals, all but four (2.5%) were held at all institutions. *Academy of Management Annals* was held by the fewest institutions, nine of 16. This was followed by *Citizenship Studies* (held at 12 institutions), *Society and Natural Resources* (13 institutions), and *Socio-Economic Review* (15 institutions). The 15 total gaps in top aggregate holdings were distributed across nine institutions. ILCHI and MD both had three gaps, RUTG and NE two gaps, and MN, NU, OU, PSU, and UI each one.

Holdings gaps for ILCHI were most notable in relation to the journals' CDRank. *Academy of Management Annals* (ILCHI CDRank 39) ranks just outside the institution's top 37, and *Citizenship Studies* holds an institutional CDRank of 70. NU also lacked any holdings for *Academy of Management Annals* despite the journal holding an

institutional CDRank of 58. Remaining institutional CDRanks for journals cited but not held ranged from 192 to 381. In 53% of holdings gaps (eight of 15), the journal was not cited in any of the institution's dissertations. Overall, 3,676 journals, 65% of the entire 5,634 journal list, were held by all or all but one of the institutions.

Discussion

The interdisciplinary nature of sociological research and the role of the local context offers challenges to understanding multi-institutional journal use (Hargens, 1991; Kuruppu & Moore, 2008; Sussman, 1978). Muli-institutional studies of journal use in dissertations typically provide an aggregate list of core journals based on citation counts within the discipline but fail to explore institutional comparison as a way to how to understand and enhance local use (Beile et al., 2003; Buttlar, 1999; Kuyper-Rushing, 1999; Walcott, 1992). Simply put, an aggregate list of high use journals is only the starting point for a library subject specialist exploring journal use within a discipline at their institution.

Finding a Common Core

The top six journals (Table 6) in our study of dissertations in sociology (*American Sociological Review, American Journal of Sociology, Annual Review of Sociology, Social Forces, Social Problems*, and *Social Science Medicine*) are all important journals in sociological research. These journals also consistently fall within the top 37 journals for each institution. However, only one of them (*Social Science Medicine*) begins to hint at the interdisciplinary nature of sociological research.

We begin to see stronger evidence of the interdisciplinary nature of sociological research from our core list (Table 6) from the journals that follow in rank 7-13 (life course, demography, political science, health, gender, public health). What is not as apparent from our core list (Table 6 and 7) is that it is here that we begin to see the institutional difference in priorities. For example, the journal *Demography* is not as high a priority for Northwestern (CDRank 51) and Iowa (CDRank 56). This doesn't necessarily mean that it is not a priority for dissertation work at these institutions, but it begs the question: How common (what rank) does a work have to be in order for it to be considered an institutional priority?

Institutional Comparisons

Any common core list of multiple institutions is by nature homogenous consistent with the research method. By combining the institutional core lists it is easy to lose some of the unique institutional research foci and nuances within the discipline. For example, the *Journal for the Scientific Study of Religion* meets our top 37 threshold (CDRank n_institution) at Penn State, Purdue, and Nebraska but does not have as high a use at the other institutions. Our study methodology focusing on institutional comparison begins to approach these heterogenous topics and collections but requires further investigation. For example, there is a stronger correlation (.598) between Penn State and Nebraska's top 37 (CDRank n_institution) compared to other institutions. However, our method fails to explain why this strong correlation exists. Theoretically, finding empirical methods to examine these strong institutional correlations may help identify the disciplinary nuances of journal use in sociological research (Table 5), but that is beyond the scope of this study.

Holdings

Institutions in the BTAA for the time studied consistently had near-full coverage for the journals in our study. This held true for the individual institutional ranks as well as the aggregate and combined analysis. Further study of

citations from journals that were cited fewer times could offer some insight into the 1,958 journals that did not have comprehensive holdings.

Limitations

There were 37 dissertations under embargo that are not included in this study although attempts were made to contact individual researchers (Table 1). Northwestern University (12) and the University of Maryland (14) had the highest number of dissertations under embargo at the time of this study. The number and focus of dissertations from 2016-2020 from the institutions in our study may skew results over a longer period. They may also simply reflect a paradigm of study that has changed before and after that timeframe. The choice of limiting citation counts to single entries in bibliographies affects the overall counts of citations that were used multiple times in a single dissertation. To be clear, a single citation could be repeated, but it would have to be in a different dissertation. Finally, a compelling argument could have been made to examine the top 158 journals as our top core from each institution. Based on the evidence that at least two institutions cite all the journals identified in the four shared list 13-16 in Table 3.

Library Holdings

Holdings represent those found in WorldCat and respective library ILSes during November 2023. Several factors limit the effectiveness of representing libraries' journal holdings. Coverage is not recorded in ways which can be easily machine-parsed at scale to determine whether holdings represent part or all of a publication run. E-journal records are often updated on a monthly basis, resulting in varying results by month. Additionally, if a library does not have sufficient staffing to perform updates, their WorldCat holdings statements may not reflect recent weeding. The presence of WorldCat holdings or of a record in the library's ILS (queried by Z39.50) indicates, at minimum, that the library has held some coverage of this journal at some point in time.

University of Nebraska-Lincoln's Z39.50 documentation was not available online and email inquiries were not answered, so the Z39.50 phase could not be run. Gaps in Nebraska's WorldCat holdings for the combined list of top 161 journals were manually queried by title and ISSNs using the library's Primo discovery search. As indicated in Results, all but two of these journals were found.

Future Research

It is always difficult to know where to draw the line when constructing a core list of journals. One empirical approach is to limit the core to 158 journals (using Table 8, 13-16 institutions) simply by examining the overall total to determine if there is at least one institution with the same number. Another approach that considers local priorities would be to identify a combined top 37 CDRank, DissRank, and CitRank for each institution essentially replicating the method done in this study for the aggregate.

Beyond the Core

It is clear from our study that academic libraries need to provide access to a large corpus of journal titles to support graduate research in sociology. This holds true for the aggregate whole (5,659 in Table 2) and cross-comparisons of unique and shared titles between institutions (Table 3). Almost 66% of the journals (3,781) are cited at 1-2 institutions and 28% of the journals (1,612) are cited at 3-12 institutions. In sum, future bibliometric analysis of journals use must expand its methods beyond rudimentary analysis of core disciplinary titles.

Sub-discipline and Topics in Sociology

Identifying methods to explore the reasons why there are strong correlations between certain institutions CDRank n_institution list has the potential of uncovering some of the subdiscipline nuances of sociological research. Another approach suggested in a previous study examining the sociology of religion (Woods, 2023) would be to explore the relationship between core subdiscipline journals (*Gender and Society, Society and Education*) and core journals used in dissertations that cite those subdiscipline journals. In sum, looking at journal clusters is similar to pairing of concepts in a reference question.

Library Holdings

Several areas of potential future research presented themselves in the overall holdings data obtained for this project. For journals only cited one or two times in sociology dissertations, is this because they belong to other disciplines or because they have fewer library holdings? Do patterns emerge within the one or two citation items when disciplinary classification is considered? Are there correlations between the institutions at which the journals were cited and those which hold them, suggesting availability plays a role in citation? The BTAA has also spent significant effort developing a shared print serials program—how do its holdings compare with these citations?

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