

Spatial Population Bibliography Report

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This report discusses results from the **Spatial Population Index** database featured on the GIS Population Science website. This database was developed from the CSISS spatial analysis literature database (<http://www.csiss.org/resources/litsearch.html>), which collects references to journal articles from of relevance to spatial and spatio-temporal analysis in the social sciences. The Spatial Population Index references journal articles within demography and closely related disciplines that use spatial analytic techniques or topics. The database includes those demography articles from the original CSISS database and nearly one thousand new articles drawn from major demography journals and several online databases that specialize in demography and population studies. This report presents summary statistics of the current database and the methods used to gather and code the data set.

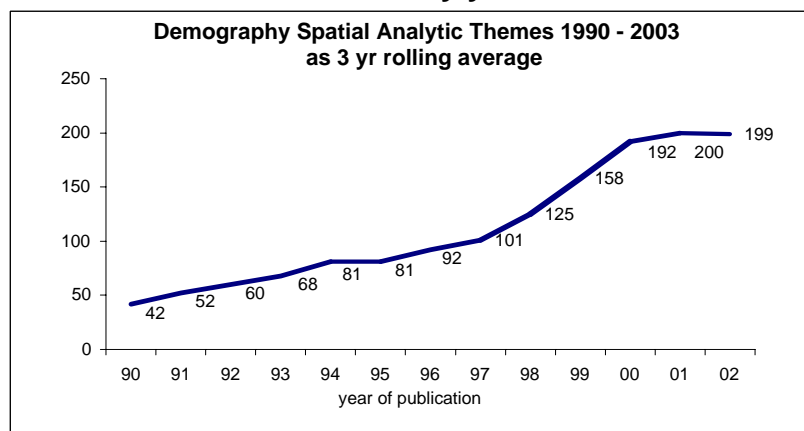
Summary Statistics

Total Articles: **2329**

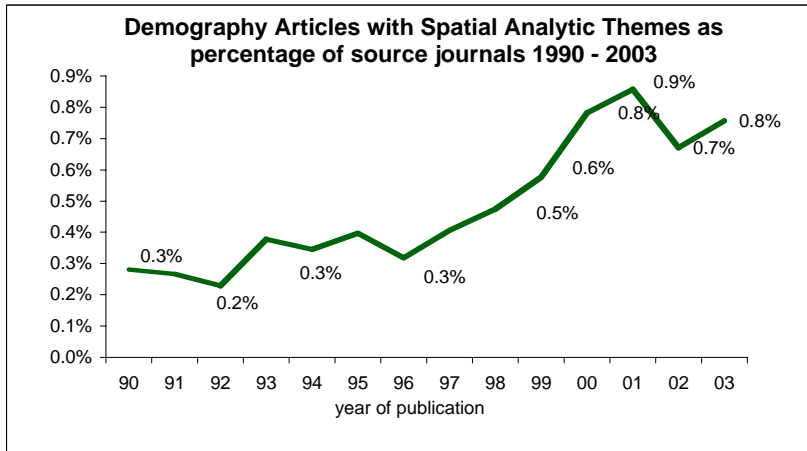
Years covered: 1956 – 2004.

Note: Since the database is derived from online indexes, the best coverage is from 1990 to 2003. Since the indexing services had not completed the coding for 2003 and 2004 at the time of this survey (in December 2004), the records for these recent years are lower than expected.

Articles by year



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***Note:** percentage of source journals is based on the total number of articles for each journal in the current database that contains one or more spatial articles on spatial themes of relevance to demography.

Articles by Spatial Analytic Methodology (of 2329 articles):

These are the main categories for the spatial subject keywords listed in the appendix.

Geographic Information Systems	351
Map Making and Visualization	173
Spatial Econometrics	1077
Spatial Simulation & Spatial-temporal Dynamics	442
Spatial Optimization & Spatial Interaction Modeling	753
-Spatial statistics*	506
-Location Analysis*	296
-Transport Optimization*	85

(* Recombines subject categories from the prior 3 methodologies)

Spatial Analytic Tools and Methods in the Database (by article count)*

neighborhood effects	189	gravity model	58
spatial diffusion	151	cartography	50
spatial data analysis	140	agglomeration economies	50
locational decision making	119	Facility location	50
spatial econometrics	113	spatial heterogeneity	49
spatial regression	103	spatial equilibrium	46
Spatial dynamics	102	land use model	43
spatial cluster	95	spatial correlation	42
spatial effect	93	spatial interaction	41
mapping	88	transport costs	41
population potential model	86	spatial cluster analysis	40
spatial economy	83	urban hierarchies	40
spatial statistic	83	industrial location	38
spatial decision	72	spatial association	36
spatial autocorrelation	63	locational analysis	35

***Some articles may be coded for multiple categories of tools and methods.**

The appendix lists the full set of spatial keywords used in the coding.

Journal Totals

(of 682 journals containing articles on spatial themes, including 150 journals coded as “Demography.”)

Column 1 shows 30 demography journals sorted by article count.
Column 2 shows the top 30 journals in the complete current database.

	Demography Journals	Article Count	All Database Journals	Article Count
1.	International Migration Review	85	International Migration Review	85
2.	Population and Environment	47	Urban Studies	70
3.	Demography	39	Environment and Planning A	55
4.	International Migration	35	Population and Environment	47
5.	Population Research and Policy Review	31	Demography	39
6.	Population Studies	27	International Migration	35
7.	Journal of Population Economics	26	Social Science & Medicine	33
8.	Asian and Pacific Migration Journal	26	Population Research and Policy Review	31
9.	Population and Development Review	23	Journal of Regional Science	28
10.	Journal of Biosocial Science	16	Population Studies	27
11.	European Journal of Population	16	Journal of Population Economics	26
12.	Journal of Ethnic and Migration Studies	16	Asian and Pacific Migration Journal	26
13.	International Migration	15	Journal of Urban Economics	25
14.	Population	11	Regional Science and Urban Economics	25
15.	Studies in Family Planning	8	Population and Development Review	23
16.	Yearbook of Population Research in Finland	6	Regional Studies	21
17.	Journal of Population	6	Geographical Analysis	20
18.	Journal of Population Research	5	Annals of the Assoc. of Amer. Geographers	19
19.	Family Planning Perspectives	5	Health & Place	18
20.	Population Review	5	Social Biology	18
21.	Journal of Population Studies	5	Environment and Planning B-Planning	16
22.	Philippine Population Journal	5	Journal of Biosocial Science	16
23.	Studi Emigrazione/Etudes Migrations	5	Professional Geographer	16
24.	Migration	4	Social Science Quarterly	16
25.	Annals of Human Biology	3	American Sociological Association	16
26.	Discrete Dynamics in Nature and Society	3	European Journal of Population	16
27.	Canadian Studies in Population	3	Journal of Ethnic and Migration Studies	16
28.	Migration World Magazine	3	Growth and Change	15
29.	Monthly Labor Review	2	Papers in Regional Science	15
30.	Research on Aging	2	International Migration	15

Related Discipline Categories by Article Count

The counts combine coding for journal discipline, author discipline, and direct coding of articles. The journal discipline coding is most comprehensive. Not all articles were directly coded for disciplines other than demography (i.e., manually read and coded). All

articles can be considered to cover demography or topics often employed by demographers and others examining population dynamics and related themes.

Discipline	Article count	Proportion of Dataset
Geography	573	24.6%
Economics	709	30.4%
Sociology	438	18.8%
Urban Studies	414	17.8%
Public Health	367	15.8%
Regional Science	331	14.2%
Urban Studies	298	12.8%
Urban & Regional Planning	239	10.3%
Political Science	221	9.5%
Environmental Studies & Policy	217	9.3%
Criminology	116	5.0%
Law & Society	107	4.6%
History	96	4.1%
Anthropology & Archaeology	73	3.1%
Statistics & Operations Research	65	2.8%

Coding Methods

Three different but complementary approaches were used in compiling the database on the uses of spatial analysis in population science – (1) expanding the range of keywords used to search the existing CSISS literature database, (2) a direct search of contents in demography journals not previously covered by the CSISS database, and (3) the addition of online citation sources not originally used for building the CSISS database.

1) Coded Demography and Related Articles in the CSISS Literature Database.

The CSISS literature database (<http://www.csiss.org/resources/litsearch.html>) is current to July 2004, and has over 12,000 journal articles that match the spatial keywords used in the online searches. The CSISS system for searching and coding articles by discipline was used to expand the set of demography articles in the Spatial Population Index database. However, the list of keywords was expanded in consultation with demographers and library search specialists to cover selected demography topics and demographic analytic methods. The following is the list of keywords used for assembling the spatial demography literature database, based on a sequential search, starting with the “primary” list and followed by scanning remaining articles found through the “secondary” and “third” lists:

Keywords for Coding Literature as Demography

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Primary	Secondary	Third
census	accessibility	families
migration	ecologic	urban
mobility	segregation	cross national
Mortality	social network	developing country
voting	health	metro
populations	HIV	state
redistrict	AIDS	rural
immigration	contraception	residential
settlement	deforestation	sex
employment	epidemiology	topographic
population	fertility	birth
fertility	refugee	heterogeneity
community	reproduction	homogeneity
neighborhood	globalization	indigenous

Results: 1621 articles from the existing CSISS literature database were coded as demography/demography related. Article abstracts and authors' keywords were scanned for relevance to the demography classification, however the interpretation of "demography" was kept fairly broad in order that users might consider alternative applications of spatial methods of possible interest to demographers.

Many of the articles could be considered multi-disciplinary, and some come from disciplines that might not be seen by demographers as relevant to their field. Geography, economics, sociology, urban studies, and public health (especially epidemiology) are most broadly represented. The database lists other related disciplines covered by the articles.

The web version of the searchable database was compiled using FileMaker Pro. This source database lists disciplines in three field locations: journal discipline, author discipline, and disciplines. The web-page entry combines these into a single field, named "related disciplines." Although "demography" is not listed, it may be assumed that all articles in the database are demography related. Most articles are labeled by the online search source database (e.g., EconLit), and some (about 20%) include author's affiliation.

2) Direct Search of Demography Journals for Spatial Keywords.

In order to capture demography articles that were not included in the CSISS database, 39 journals, judged central to demography, were added for direct search of their online contents. The complete set of articles from these journals included about 14,000 articles, of which **442 new articles** matched terms used for spatial keywords (see appendix).

3) Search of online sources not covered in our current CSISS database.

There are a few online citation sources that were not scanned in producing the CSISS literature database. Of these, two covered journals not included in sources used for the CSISS database and were structured for identifying articles relevant to spatial approaches in demography

The Cambridge Scientific Abstracts recently updated its social science coverage with several new sources, all with standardized subject categories of demography and population. BiblioLine was also added as a citation source for searching for the keywords associated with spatial analysis.

Cambridge Scientific Abstracts	Descriptor searched:
National Criminal Justice Reference Service Abstracts	Demography (04015)
PAIS International	Population
Worldwide Political Science Abstracts	Population
Social Services Abstracts	Population
Sociological Abstracts	Demography (127300)
Biblioline	Demography
Family & Society Studies Worldwide	
African Studies	
Black Studies Database	
Women's Resources International	
Sexual Diversity Studies	

Results: These sources yielded **287** new articles.

Appendix A

List of Journals Searched Directly for Articles using Spatial Analysis

American Demographics	Journal of Population Studies
Asian and Pacific Migration Journal	Migration
Canadian Studies in Population	Migration Today
Demography	Migration World Magazine
European Demographic Information Bulletin	Population
European Journal of Migration and Law	Population and Development Review
European Journal of Population	Population and Environment
Family Planning Perspectives	Population Bulletin
Forced Migration Review	Population Bulletin of the United Nations
International Family Planning Perspectives	Population et Famille
International Migration	Population Research and Policy Review
International Migration Review	Population Review
Journal of Biosocial Science	Population Studies
Journal of Ethnic and Migration Studies	Population Trends
Journal of International Migration & Integration	Social Biology
Journal of Population	Migration Studies
Journal of Population Economics	Studies in Family Planning
Journal of Population Research	

Appendix B

Spatial-Term Search Strings used to Search the *Social Science Citation Index*

GIS:

Search term	Search string (for one or more terms)
geographic information system / GIS	geographic information system* or GIS or or geographical information system* or geograph* information system*

Cartography and Visualization:

Search term	Search string (for one or more terms)
Cartography	cartograph* or mental map* or thematic map* or map projection* or choropleth map* or cartogram* or geographic* visualization or isopleth or isoline
Mental maps	map or mapping not cartograph* not concept* not GIS not cogniti* not mental not neural not neuron*
Thematic mapping	
Map projections	
Choropleth maps	
Cartogram	
Geographic visualization	
Isopleth maps	
Isoline maps	
Map	

Spatial Econometrics:

spatial econometrics	(econometric and spatial) or (econometric and location) or (spatial* and cluster analysis) or (analyzing cluster) or spatial cluster or locational cluster or geograph* cluster or (cluster* of spatial)
spatial cluster analysis	
spatial cluster	
spatial autocorrelation	spatial* autocorrelat* OR spatial* auto-correlat* OR spatial* regression* or autocorrelation of spatial OR spatial* near2 dependen* or (spatial economy) OR location* dependen* OR geograph* dependen* OR location* regression*
spatial regression	
spatial economy	
spatial dependence	
spatial statistic	spatial statistic* or spatial correlation* or correlation of spatial* or spatial prediction* or prediction of spatial* or location* prediction or predicting the location or ((heterogeneit* or autoregress*) and (spatial* OR location* OR geographic*))
spatial correlation	
spatial heterogeneity	
spatial prediction	
spatial autoregressive	
neighborhood effects	neighborhood effect or neighbourhoood effect or effect of neighborhood or effect of neighbourhoood or agglomeration* of econom or agglomeration econom or (agglomeration* SAME econom*)
agglomeration economies	
spatial effect	spatial effect* or locational effect* or geograph* effect* or

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spatial data analysis	spatial data or spatial association* or association* of spatial* or spatial* externalit* or location* externalit* or geograph* externalit* or (spatial and correlogram*)
spatial association	
spatial externalities	
spatial correlogram	
spatial trend surface analysis	((spatial*) OR (locational) OR (geographic*) OR (regional)) AND ((trend surface*) OR (point pattern*) OR (maximum likelihood) OR (point pattern) OR (Bayesian) OR (spillover*))
spillover	
point pattern analysis	
maximum likelihood estimation	
spatial variograms	
Bayesian analysis / model	

Spatial Optimization & Spatial Interaction Modeling:

spatial Pareto optimality	(spatial* OR location* OR geographic*) AND Pareto optim* or gravity model* or location* theor* or location* hypothes or theory of location or transportation problem* or transport SAME cost* or transport expans* or Von Thunen
gravity model	
Location Theory	
The transportation problem	
Transport costs	
Von Thunen	
spatial equilibrium	spatial equilibri or equilibrium model of spatial or locational analys* or analys*s of location or facility location or firm location or location* of facilit* or location* of firm or industr* SAME location or plant location or location* of plant
Facility location	
industrial location	
Locational analysis	
spatial interaction	spatial interaction* or interaction of spac* or interacting spac* or (central place AND theor*) or space econom* or economic of space or economics of space or distance decay or decay of distance or traveling salesman
Central Place theory	
Space economy	
Distance decay	
Traveling salesman problem	
Urban Hierarchies	(urban SAME heirarch) or trip distribution or (transportation SAME distribution) or trip matri or trip network or (land use SAME model) or optimal vehicle rout or (optim* rout*) or rout* algorithm or algorithm of route or population potential
Trip distribution model	
Trip matrix	
Land use model	
Optimum route	
Routing algorithm	
Population potential model	
p-median location	
Friction of distance	
Entropy-maximizing model	
spatial optimization	
spatial probit models	
Network assignment	network assignment* or assignment network or locational NEAR decision making or location NEAR allocation* or locational network* or location network* or network* of location or spatial network* or network* of spatial
Locational decision making	
Location-allocation modeling	
locational network	
spatial network	

Spatial Simulation & Spatial-temporal Dynamics:

Spatial dynamics	spatial dynamic* or dynamic spatial or regional dynamic or spat* temporal dynamic or space time dynamic or spatial decision* or locational decision* or regional decision* or location decision* or spatial* diffusion or geograph* diffusion
spatial-temporal dynamics	
Spatial decision	
spatial diffusion model	
Spatial diffusion	
spatial stochastic processes / models	(spatial or locational or geograph*) and (stochastic process* or stochastic model* or agent based or simulation or Hagerstrand)
Agent-based models (ABM)/simulation	
spatial simulation	
Hagerstrand model	
Monte Carlo Markov chain	(spatial or locational or geograph* or regional) AND (Monte Carlo or Markov chain or dynamic model or model of dynamic or modelling of dynamic or decision support system* or cellular automat*)
Monte Carlo simulation	
cellular automata / automaton	
Markov chain	
Dynamic modeling	
Spatial decision support system (SDSS)	