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What methods are most frequently used in research in criminology and criminal justice?

Gary Kleck [a,*], Jongyeon Tark [b], Jon J. Bellows [c]

[a] College of Criminology and Criminal Justice, Florida State University, 634 West Call Street, Tallahassee, FL 32306-1127, United States
[b] Department of Criminal Justice, University of New Haven, 300 Boston Post Road, West Haven, CT 06516, United States
[c] Juvenile Justice Educational Enhancement Program, Florida State University, 325 John Knox Road, Building L, Suite 102, Tallahassee, FL 32303, United States

Abstract

Articles published in seven leading criminology and criminal justice journals were coded with regard to the research methods used, focusing on the general research designs, data-gathering methods, and statistical analysis techniques employed. The results indicated that survey research was by far the dominant mode of acquiring criminological information, that cross-sectional nonexperimental designs still predominated, and that multivariate statistical methods were the norm. The findings could aid criminology and criminal justice faculty in devising graduate methods curricula that reflected the state-of-the-art as currently practiced by criminological researchers.

Introduction

What research methods are most commonly used by scholars who study crime and society's reaction to crime? This question could be of general interest to criminologists curious about the tools commonly used by their colleagues. It is, however, also of special interest to graduate faculty who must establish or periodically revise their curricula to keep their graduate training current. Some methodological skills may be of only very specialized interest to those focusing on narrow topics calling for rarely used techniques. Other techniques are so widely used as to be regarded as virtually required topics in any graduate methods curriculum. The goal of this inquiry was to establish the research methods most commonly used by the scholars who publish in the leading criminology and criminal justice journals.

Methods

The focus was specifically on methods used by criminological researchers, so attention was confined to journals that were exclusively or primarily concerned with criminological topics, rather than the wide array of journals that occasionally publish such work but mostly concern other subjects. Further, the focus was particularly on the methods used in the presumably better quality research published in the leading journals in the field.

There was some consensus, but no unanimity, about which were the most important, prestigious or frequently cited journals. For example, *Criminal Justice Review* appeared in the lists compiled by Sorenson, Patterson, and Widmayer (1993), but not in rankings based on ratings of prestige in a survey conducted by Williams, McShane, and Wagoner (1992, summarized in Cohn,

* Corresponding author. Tel.: +1 850 894 1628; fax: +1 850 644 9614.
E-mail address: gkleck@mailer.fsu.edu (G. Kleck).

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Farrington, and Wright (1998, p. 26)). *Criminal Justice and Behavior* was high in the ranks of journals assessed by Sorenson et al. (1993) and Williams et al. (1992), but not in the earlier assessments of Shichor, O'Brien, and Decker (1981). Likewise, *Law and Society Review* ranked high in lists generated by Regoli, Poole, and Miracle (1982) but not in the citation-frequency rankings of Cohn and Farrington (1990). These differences were probably partly due to actual changes in importance over time and partly to different methods of assessing importance.

Attention was concentrated on the "consensus" journals, those that had most consistently appeared in these lists. It was also important to cover any newer journals that could not be included in earlier lists because the journals were created fairly recently. It would be undesirable for the selection of leading journals to be out of date, and thereby reflect prestige confined to earlier eras. As it happens, one of the more recent ranking efforts yielded a list of journals that met all these requirements. Williams and his colleagues (1992) asked a sample of over 250 members of the Academy of Criminal Justice Sciences to rate, on a scale from 0 to 10, the prestige of the leading criminology and criminal justice journals. The following journals were found to be the seven most highly rated (ratings in parentheses): *Criminology* (CR, 8.7), *Journal of Criminal Law and Criminology* (JCLC, 8.2), *Justice Quarterly* (JQ, 8.0), *Journal of Research in Crime and Delinquency* (JRCD, 7.9), *Crime and Delinquency* (CD, 7.6), *Journal of Criminal Justice* (JCJ, 7.3), and *Journal of Quantitative Criminology* (JQC, 7.3). Taking into account the eras covered by various rating studies and the years when journals began to publish, all these journals also consistently appeared in the top ranks of lists of leading journals in the field (Cohn & Farrington, 1990; Regoli et al., 1982; Shichor et al., 1981; Sorenson et al., 1993). Articles in these seven journals therefore were covered.

Readers might dispute the exact composition of the list, and speculate about the resulting impact of including or excluding particular journals that arguably should or should not have been included. Therefore, results will be presented for individual journals, as well as for the entire set of seven taken collectively, enabling readers to see for themselves how methods vary across journals and how conclusions might have differed had a given journal not been included.

The analysis encompassed all original articles and research notes in these seven journals. Editorial introductions, speeches, letters, corrections, book reviews, comments on articles previously published in the same journals, and author replies to those comment articles were excluded. Each "case" in the analysis was an original article.

The senior author created a coding protocol (available from that author) and determined the coding for any ambiguous cases. The junior authors, graduate students in criminology and criminal justice, coded the articles. Each article's journal, volume, issue number, and starting page were recorded and each article was classified as to whether it was (a) nonempirical, which would include purely theoretical or conceptual papers, as well as literature reviews with no original empirical evidence, (b) empirical but exclusively descriptive, in the sense that there was no direct testing of causal hypotheses, or (c) empirical and analytical in the sense that it performed some tests of causal hypotheses. The analyses covered all empirical articles appearing in these seven leading journals in calendar years 2001 or 2002.

Empirical articles were coded as to their general research design. Did they use experimental methods (i.e., the work involved researcher manipulation of conditions to which subjects were exposed) or was study purely nonexperimental? Did the research consider evidence concerning: (1) individual persons only, (2) macro-level units (e.g., the populations of cities or states), or (3) both individuals and macro-level units? Was the design (1) purely cross-sectional (individuals or populations compared with each other), (2) purely longitudinal (a single population studied at multiple points in time), or (3) both cross-sectional and longitudinal (multiple populations studied at multiple points in time)?

Each empirical article was also coded for every data-gathering technique that was originally used to generate the study's information. This would include methods used by earlier researchers to gather information that was then subjected to secondary analysis by the authors of the article being coded. Since articles often were based on more than one type of data, any one article could be coded for however many techniques happened to be used in the research. Survey-based articles could also be coded affirmatively for more than one survey type. For example, the National Crime Victimization Survey uses both face-to-face and telephone interviewing, so articles using this source would be coded as being based on both types of surveys.

Each article was coded for whether or not any of the following data-gathering techniques were used: (1) telephone interviews, (2) formal personal (face-to-face) interviews, (3) mail questionnaires, (4) other self-administered (e.g., classroom) questionnaires, (5)

compilations of official statistics pertaining to macro-level units (e.g., the Uniform Crime Reports), (6) archival information drawn from existing records concerning individual persons or events (e.g., sentencing studies using court records, recidivism studies using parole records, studies of violent crimes using police offense reports, etc.), (7) experimental observations, (8) historical methods such as reading newspaper articles, public speeches, diaries, memoirs, etc., (9) informal interviews of the sort commonly conducted in field research, (10) direct observation of behavior by researchers, and (11) miscellaneous other methods.

Articles were also coded as to whether the authors gathered their own data (primary data) or analyzed data previously gathered by others (secondary data). This distinction is important because it bears on the importance of learning how to locate and manage existing datasets.

Finally, the empirical articles were coded for all statistical data analysis techniques employed. Once again, articles could be coded affirmatively for as many analytic techniques as were applied in the article. Articles were coded for (1) univariate descriptive statistics such as means, medians, and standard deviations, (2) bivariate statistics such as correlations and tabular measures of association, (3) ordinary least squares regression (OLS) and weighted least squares (WLS) regression, (4) logistic regression and other techniques for analyzing limited dependent variables, such as probit analysis, Tobit, etc., (5) structural equations modeling, including covariance modeling, analysis of latent variables, two-stage least-squares estimation, etc., (6) time series and interrupted time series methods such as ARIMA, Box Jenkins/Box-Tiao methods, and variants thereof, (7) hierarchical linear modeling (HLM), (8) factor analysis, (9) event history and survival analysis, (10) Poisson and negative binomial models for analyzing count data, and (11) miscellaneous other multivariate analysis methods.

Findings

Research designs

Table 1 displays the prevalence of various research designs and data-gathering methods used in criminology and criminal justice research published in 2001–02. Most (62 percent) work published in the leading journals was done at the individual level. Despite the obvious advantages of situating individuals in their macro-level contexts, multi-level research remained unusual, accounting for only 3 percent of empirical articles. Further, most work done at either the individual or macro-level of analysis was cross-sectional in nature: 45 percent of articles were based on individual-level, purely cross-sectional analyses and another 15 percent were based on macro-level purely cross-sectional analyses.

Data-gathering methods

The most striking finding concerns the data-gathering methods used in this field. Survey research dominates the field of criminology and criminal justice. No other method rivals survey methodology as a way of gathering information on crime, criminals, and society's reaction to crime. Some kind of formal survey was used to generate information used in 45 percent of all empirical research articles published in the field's leading journals, compared to archival data, mostly drawn from criminal justice records, which was used in 32 percent of the articles, and official statistics concerning macro-level units, which were used in 26 percent of articles. Experimental research generated data for only 4 percent of the articles published in the seven journals. This would likely be different if journals oriented towards psychological research, such as *Criminal Justice and Behavior*, had been included in the study. Nevertheless, even taking this into account, it was unlikely that experimental methods were used in more than a small fraction of crime studies.

Likewise, the principle tools used in qualitative field research, informal interviews and direct observation, were used in only 12 percent of research. Even this modest figure, however, overstated the prevalence of research that was primarily qualitative in character, since many of the articles using these methods were primarily quantitative articles that were supplemented with a handful of informal interviews, such as statistical analyses of sentencing patterns supplemented by a few interviews with judges. If a primarily qualitative article was defined as one using informal interviewing or direct observation (including participant observation), but *not* using multivariate statistical methods (i.e., articles using multivariate methods were excluded), only 4.5 percent of articles were qualitative. This prevalence did not vary substantially across journals.

Secondary analysis of existing datasets is central to criminological research. Among empirical articles, no less than 58 percent used secondary data. This might reflect the difficulty and expense of original data gathering. It also implies the importance of methodological training in how to identify and obtain existing

Table 1
General research methods used in criminological research

	All seven journals	CR	JCLC	JRCD	CD	JCJ	JQC	JQ
Total number of articles	375	63	43	33	55	93	30	58
Percent empirical	81.3	90.5	23.3	90.9	67.3	92.5	100	94.8
Research design (percent)[a]	305	57	10	30	37	86	30	55
Individual-level CX only	45.2	35.1	0.0	36.7	35.1	62.8	30.0	56.4
Individual-level CT only	13.8	5.3	20.0	23.3	10.8	12.8	30.0	10.9
Individual and macro-level	3.0	8.8	0.0	0.0	2.7	1.2	3.3	1.8
Macro-level, CX only	15.1	15.8	0.0	16.7	21.6	10.5	10.0	21.8
Macro-level, CT only	11.8	10.5	80.0	6.7	18.9	7.0	13.3	5.5
Macro-level, CX and CT	4.6	5.3	0.0	13.3	2.7	1.2	13.3	1.8
Data-gathering methods								
Total number of empirical articles	305	57	10	30	37	86	30	55
Some kind of formal survey (percent)[b]	45.1	54.0	0.0	51.5	34.5	57.0	43.3	56.9
Telephone survey	9.0	12.5	0.0	7.1	5.6	9.3	13.3	7.3
Face-to-face survey	21.2	40.4	0.0	28.6	8.3	16.3	20.0	18.2
Mail survey	10.6	1.8	0.0	3.6	19.4	16.3	6.7	12.7
Non-mail self-administered survey	22.1	17.9	0.0	30.0	25.0	23.3	20.0	23.6
Official statistics	25.6	28.1	70.0	16.7	29.7	16.3	33.3	27.3
Archival data	31.8	28.1	70.0	20.0	48.6	26.7	23.3	36.4
Experimental data	4.3	1.8	0.0	3.3	5.4	5.8	0.0	7.3
Historical methods	3.0	1.8	10.0	0.0	2.7	3.5	0.0	5.5
Informal interviews	7.6	12.3	0.0	6.7	22.2	1.2	0.0	9.1
Direct observation	6.2	10.5	0.0	3.3	5.4	5.8	0.0	9.1
Qualitative research[b]	4.5	6.3	0.0	6.1	5.5	3.2	0.0	8.6

CR = *Criminology*, JCLC = *Journal of Criminal Law and Criminology*, JRCD = *Journal of Research in Crime and Delinquency*, CD = *Crime and Delinquency*, JCJ = *Journal of Criminal Justice*, JQC = *Journal of Quantitative Criminology*, JQ = *Justice Quarterly*, CX = cross-sectional, CT = cross-temporal.

[a] Of empirical articles, percent that used.

[b] Informal interviewing or direct observation, but no statistics beyond univariate.

datasets relevant to one's research topic, as well as how to manage and analyze data gathered by others.

Data analysis techniques

Table 2 displays the findings on the prevalence of the various statistical techniques used to analyze criminological data. Nearly nine out of every ten empirical articles used some kinds of univariate statistics, while 73 percent used some bivariate statistics, and nearly three-quarters used one type or another of multivariate statistics. The most common multivariate methods by far were OLS (or WLS) regression and logistic regression or similar limited dependent variable methods. While the field is undoubtedly moving towards more complex statistical methods, each of the other multivariate methods was used in less than 7 percent of the empirical articles. On the other hand, collectively speaking, one or more of the methods more advanced than OLS were used in 50 percent of the articles. This is a reflection of the fact the more advanced methods are often used to deal with very specialized problems, such as two-way causation, dependent variables with censored distributions, or nonindependent errors. The methods are essential to dealing with the particular problems to which they are applied, but each of the problems arises relatively infrequently. Thus, while it is clear that advanced statistical methods of some sort are important tools in the field, it is not clear which particular ones are the most important.

Regarding differences across the seven journals, JCLC was the most deviant case. As a mixture of both law review and criminology journal, it is perhaps not surprising that over three-quarters of its articles were nonempirical, and its few (n = 10) empirical articles were less likely to involve multivariate statistical analysis. Conversely, articles in JQC showed the highest rate of use of advanced multivariate statistical methods. These exceptions aside, the journals were more similar than different in the array of methods used in their empirical articles. In any case, since the

Table 2
Data analysis techniques used in empirical criminological research

	All seven journals	CR	JCLC	JRCD	CD	JCJ	JQC	JQ
Total number of empirical articles	305	57	10	30	37	86	30	55
Univariate statistics (percent)[a]	88.9	82.5	80.0	73.3	94.6	91.9	90.0	96.4
Bivariate statistics	73.4	86.0	30.0	86.7	73.0	66.3	56.7	81.8
Some kind of multivariate statistics	72.5	86.0	20.0	76.7	67.6	59.3	96.7	76.4
OLS/WLS	31.8	38.6	10.0	20.0	35.1	31.4	36.7	30.9
Limited dependent variable methods	28.5	36.8	10.0	30.0	35.1	16.3	30.0	36.4
Poisson/negative binominal	4.6	10.5	0.0	3.3	0.0	2.3	16.7	0.0
Structural equation modeling	6.6	10.5	0.0	23.3	0.0	2.3	3.3	7.3
Hierarchical linear modeling	5.6	14.0	0.0	6.7	2.7	1.2	6.7	5.5
ARIMA	2.3	3.5	0.0	3.3	5.4	0.0	3.3	1.8
Factor analysis	4.3	3.5	0.0	10.0	5.4	7.0	0.0	0.0
Event history/survival analysis	0.7	0.0	0.0	0.0	2.7	0.0	0.0	1.8
Multivariate beyond OLS/WLS	50.2	66.7	10.0	63.3	43.2	32.6	73.3	52.7
Multivariate beyond OLS/limited DV[b]	25.9	40.4	0.0	36.7	16.2	17.4	43.3	20.0

CR = *Criminology*, JCLC = *Journal of Criminal Law and Criminology*, JRCD = *Journal of Research in Crime and Delinquency*, CD = *Crime and Delinquency*, JCJ = *Journal of Criminal Justice*, JQC = *Journal of Quantitative Criminology*, JQ = *Justice Quarterly*, OLS = Ordinary least squares, WLS = weighted least squares, ARIMA = autoregressive integrated moving average.

[a] Percent of empirical articles that used.

[b] Multivariate statistics beyond OLS/WLS or limited dependent variable methods.

journals each averaged less than forty-four articles over the two-year period, any further conclusions about detailed differences across journals are likely to be unstable.

Implications for graduate training in criminology and criminal justice methods

If doctoral students are to be properly trained to carry out research, or to be able to critically read and assess the research of others, doctoral methods curricula will need to cover the research methods most commonly used in their field. The choice of courses for doctoral students is individualized to some degree, being composed of two components: (1) required or standard courses that all doctoral students take, because they are likely to be useful for most scholars in the discipline, and (2) optional courses of more specialized value to research in the areas that a given individual student plans to explore, in either a dissertation or other work. The findings suggest some ways in which the required methods curriculum should go beyond the fairly standard "omnibus" methods course that covers all the commonly used techniques, but fairly superficially. A curriculum that accurately reflects the nature of the discipline would also give special emphasis to survey research methods, as well as the use and limitations of official statistics and criminal justice archival records. It would also provide required statistical course work that covered univariate and bivariate statistics, ordinary least squares and logistic regression. These courses could then be followed up by more individualized elective coursework tailored to the particular needs of each student, focusing in depth on whichever advanced statistical methods or specialized data-gathering strategies were appropriate. Regarding statistical methods, one option would be a course surveying three or four of the relatively more frequently used advanced statistical topics, such as structural equation modeling, hierarchical linear modeling, factor analysis, and perhaps Poisson regression. The topics covered might be rotated from one year to the next, to keep pace with changes in the field, and also to provide exposure to a larger number of advanced methods by allowing students to repeat the course when the topics changed. Other options would be either separate courses on each topic, which would be more thorough but also more time-consuming, or directed independent study by the student, which can be hard on both students and faculty.

A casual survey of the websites of the leading doctorate-granting programs in the field, however, indicates that it is unusual for graduate methods curricula to include courses specifically devoted to either survey research or the problems of working with criminal justice aggregate statistics and individual archival records. While these topics are commonly covered in an omnibus methods course, it is unlikely that such coverage can be as detailed and thorough as their prominence in the field would seem to justify.

References

Cohn, E. G., & Farrington, D. P. (1990). Differences between British and American criminology: An analysis of citations. *British Journal of Criminology*, *30*, 467−482.

Cohn, E. G., Farrington, D. P., & Wright, R. A. (1998). *Evaluating criminology and criminal justice.* Westport, CT: Greenwood Press.

Regoli, R. M., Pole, E. D., & Miracle, A. W., Jr. (1982). Assessing the prestige of journals in criminal justice: A research note. *Journal of Criminal Justice*, *10*, 57−67.

Shichor, D., O'Brien, R., & Decker, D. L. (1981). Prestige of journals in criminology and criminal justice. *Criminology*, *19*, 461−469.

Sorenson, J. R., Patterson, A. L., & Widmayer, A. G. (1993). Measuring faculty productivity in a multidisciplinary field. *Journal of Criminal Justice Education*, *4*, 193−196.

Williams, F.P., III, McShane, M.D., & Wagoner, C.P. (1992). *The relative prestige of criminal justice and criminology journals.* Paper presented at the annual meetings of the American Society of Criminology, New Orleans, LA.