

# How economists cite literature: citation analysis of two core Pakistani economic journals

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## Keywords

Literature, Economics, Pakistan

## Abstract

Selected volumes of the *Pakistan Development Review* (PDR) and the *Pakistan Economic and Social Review* (PESR) were analysed to find the citation pattern of their articles. Eight volumes of each journal were selected, two volumes representing a decade. The results revealed that the PDR has been the most cited journal. The mean score of citations per article remained insignificantly different in the two core journals. More than 50 per cent of the citations from both journals were single-authored. More than 50 per cent of the citations were from non-journal sources, mainly books. Although citations from online sources were seen, it was a negligible number. About 47 per cent of the total citations of the PDR were up to five years old compared with the citations of the PESR, where only 25 per cent fell into this category. Most of the authors used foreign books as citations. There is a significant similarity in the top most cited journals in both cases. Most of the frequently cited journals were from the USA.

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## Introduction

Citations represent the pool of archival knowledge from which authors retrieve established ideas and, in turn, generate new research ideas. This knowledge may be disseminated within an area and across disciplinary boundaries. Such an exchange of knowledge represents the passage of ideas within and among academic disciplines. This exchange process has the potential to enhance or expand a field's knowledge development. Archival knowledge may be cited in a manuscript for reasons such as giving credit to related work, substantiating claims, and generally authenticating the manuscript's contribution to knowledge. Citation analysis may be defined as:

A patterns of scholarly communication, for example, the comparative importance of books versus journals, or of current versus retrospective sources, in one or more academic disciplines (ODLIS, 2002).

This technique has been widely employed to empirically investigate the structure of scholarly activities in many social and natural sciences. It has been used for the determination of research patterns, rankings of departments and researcher productivity, the evaluation of academic science institutions, and core journal lists for collection management or development. In Pakistan, citation analysis of documents is not common. One can hardly find one or two articles that have used this technique.

According to an estimate there are between 250 and 300 economists in Pakistan, either teaching or doing research in universities, at some kind of research institute, or with donors and NGOs. Of these, 50 can be considered active researchers in the field of economics (Zaidi, 2002). To disseminate the research findings of economists there are some journals and newsletters in this field in Pakistan. Out of these, three research journals have some international significance. *EconLit*, the most comprehensive international index of economic journals, indexes these three titles from Pakistan. The *Pakistan Development Review* (PDR), published by the Pakistan Institute of Development Economics, Islamabad, is considered to be Pakistan's leading journal in any discipline. Started in 1961, it has an international board of referees that includes Nobel Laureates in economics, as well as well known economists. Although PDR is not restricted to economists, as demographers and other social scientists also occasionally contribute, economists dominate. The focus of the journal is, almost exclusively, on Pakistan, and more general or theoretical articles seldom appear. PDR is a quarterly journal and is published regularly but it is about a year behind its



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schedule. One issue is dedicated to the conference proceedings of the Pakistan Society of Development Economists each year. The *Pakistan Economic and Social Review* (PESR) is published by the Department of Economics, University of the Punjab, Lahore. In 1952 the journal was started with the title *University Economist*. In 1959 the title was changed to *Punjab University Economist*. Since 1971 it has been published with the present title. This quarterly journal is published regularly but it is two years behind its schedule. It has also published papers from Pakistani and foreign authors. The *Pakistan Journal of Applied Economics* was started in 1982 by the Applied Economics Research Centre (AERC), University of Karachi. This bi-annual journal is running three years behind schedule. It also has local and foreign contributors.

## Objectives of the study

The aim of this study was to analyse citations given in core Pakistani journals in the field of economics to assess the pattern of citations. The specific objectives of the study were to find out:

- period-wise the number of citations per article;
- authorship pattern of citations;
- distribution of citations according to bibliographic forms;
- age of cited documents;
- distribution of monographic citations in local and foreign publications;
- a list of top most cited journals; and
- a comparison of all measures described above in the two journals.

## Methodology

On the basis of comparative age and regularity two journals were selected for examination, i.e. *PDR* and *PESR*. To cover the volumes published in 40 years it was decided to select two volumes of each journal from a decade. All issues published during 1969-1970, 1979-1980, 1989-1990 and 1999-2000 were selected for examination. Only full-length articles were examined. Book reviews, shorter notices and editorials were not included. Eight volumes of the *PDR* included 230 articles out of which nine had no citation. Citations of the remaining 221 articles range between 1 and 94. Eight volumes of the *PESR* included 73 articles out of which four had no citation. Citations of the remaining 69 articles range between 1 and 75. Data from about 4,113 citations from the *PDR* and 1,298 citations from the *PESR* were manually

collected and then codified and converted to electronic form using an MS-Excel spreadsheet. Data about a citation included number of authors, difference between the year of publication of cited document and of citing article, type of document cited, foreign or local publication in case of monographs, and journal title in case of journals. The SPSS software was used to analyse the collected data.

## Findings and discussion

### Citations per article

Period-wise citations of both journals were analysed. In eight volumes of the *PDR*, there were 4,113 citations in 230 articles. The mean score of citations for each article was 17.88. The *PESR* had 1,298 citations in 73 articles. Per article score was 17.78 for this journal (Table I). Mean score of citations per article does not show a significant difference between the two journals, but this score has significantly risen between 1969-1970 and 1999-2000. This rise can be seen in both journals (Figure 1). A previous citation study of a Pakistani journal found that the mean score of citations per article was 13.2 (Majid, 1995). However, MacRoberts and MacRoberts (1989) pointed out that many of the research-based disciplines' average citation rate varies significantly.

### Authorship pattern of citations

Table II shows the authorship pattern of citations of journals studied. The data indicate that 16.08 per cent and 15.63 per cent of citations of the *PDR* and the *PESR*, respectively, had no details on the authorship while 56.33 per cent and 59.67 per cent of the citations were single-authored. Two-authored citations were about 20 per cent in both journals. Other studies also show that citations with single authors usually dominate (for example, Tiew and Kaur, 2000).

### Distribution of citations according to bibliographic forms

The relative use of the different types of sources cited by the authors of the journals under study is documented in Table III for the *PDR* and Table IV for the *PESR*. The distribution of references among ten general forms of sources (journals/serials, monographs/books/government publications, conference proceedings, working/discussion/technical papers, reports, papers presented at a conference/seminar, unpublished material/mimeographed, Internet, theses/dissertations, and others) is given in the tables. In the *PDR* 38.55 per cent of the total citations were

Table I Period-wise number of citations per articles

Period	PDR			PESR		
	Articles	Citations	Citations/article	Articles	Citations	Citations/article
1969-1970	40	582	14.55	16	148	9.25
1979-1980	41	675	16.46	20	318	15.90
1989-1990	70	1,056	15.09	16	300	18.75
1999-2000	79	1,800	22.78	21	532	25.33
Total	230	4,113	17.88	73	1,298	17.78

Figure 1 Citations per article

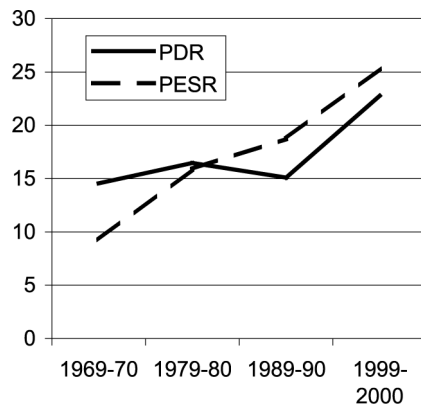


Table II Authorship pattern of citations

Number of authors	PDR		PESR	
	Citations	%	Citations	%
No author	663	16.08	202	15.63
One	2,323	56.33	771	59.67
Two	815	19.76	264	20.43
Three	216	5.24	40	3.10
Four or more	107	2.59	15	1.16

from journals while 44.85 per cent were from books. For the *PESR* journal citations were 45.61 per cent and monographic citations were 45.14. Other studies of international journals indicate that more than half of the total citations are from journal literature as there is a decline in the importance of the book as a communication

vehicle in most fields (Holsapple *et al.*, 1993). In the case of the two journals under study the use of journal citations is very low. Frequent use of non-serial citations, as Majid (1995) mentioned, might be due to problems faced by researchers from developing countries in accessing current journal literature. Some reasons for this problem include availability of a limited number of journal titles in local libraries, rapidly increasing journal prices, frequent budget cuts, restrictions on the use of foreign exchange, lack of union lists of journals, and lack of a proper document delivery service in the country. The data reveal that in later years some citations were also taken from the Internet but the authors of the *PDR* remained more active in this regard. The authors of the *PDR* used more technical papers and reports than the writers of the *PESR*.

#### Age of cited documents

The age of citations was calculated by noting the difference between the year of publication of citing articles and that of cited documents. Price (1970) found that, in research-based disciplines, on average, 43 per cent of the cited research was derived from research from within the last five years of the publication date of the article. In Majid's study (1995) of *Pakistan Journal of Agricultural Research* this category had 18.7 per cent of the total citations. In the present study, as Table V shows, 46.9 per cent of total citations in the *PDR* fall into this category. In the case of the *PESR* this category has only 24.9 per cent of the

Table III Distribution of citations according to bibliographic forms (*PDR*)

	1969-1970		1979-1980		1989-1990		1999-2000		Total	
	n	%	n	%	n	%	n	%	n	%
Journal/serial	194	33.28	285	42.35	471	44.48	636	35.35	1,586	38.55
Monograph/book/government publication	303	51.97	305	45.32	455	42.97	732	40.69	1,845	44.85
Conference proceedings	2	0.34	11	1.63	4	0.38	82	4.56	49	1.19
Working/discussion/technical papers	5	0.86	31	4.61	34	3.21	108	6.00	178	4.33
Reports	31	5.32	4	0.59	36	3.40	116	6.45	187	4.55
Paper presented at a conference/seminar	9	1.54	5	0.74	17	1.61	43	2.39	74	1.80
Unpublished material/mimeographed	5	0.86	22	3.27	17	1.61	11	0.61	55	1.34
Internet	0	0	0	0	0	0	37	2.06	37	0.90
Thesis/dissertation	21	3.60	10	1.49	19	1.79	15	0.83	65	1.58
Other	13	2.23	0	0	6	0.57	19	1.06	38	0.92

**Table IV** Distribution of citations according to bibliographic forms (*PESR*)

	1969-1970		1979-1980		1989-1990		1999-2000		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Journal/serial	33	23.91	164	51.57	156	52.00	234	44.07	587	45.61
Monograph/book/government publication	90	65.22	123	38.68	122	40.67	246	46.33	581	45.14
Conference proceedings	0	0	0	0	1	0.33	2	0.38	3	0.23
Working/discussion/technical papers	0	0	6	1.89	4	1.33	11	2.07	21	1.63
Reports	3	2.17	5	1.57	4	1.33	16	3.01	28	2.18
Paper presented at a conference/seminar	3	2.17	6	1.89	4	1.33	7	1.32	20	1.55
Unpublished material/mimeographed	3	2.17	7	2.20	3	1.00	2	0.38	15	1.17
Internet	0	0	1	0.31	1	0.33	2	0.38	4	0.31
Thesis/dissertation	3	2.17	3	0.94	3	1.00	2	0.38	11	0.85
Other	3	2.17	3	0.94	2	0.67	9	1.69	17	1.32

**Table V** Age of the cited literature

	PDR		PESR	
	<i>n</i>	%	<i>n</i>	%
Up to 5	1,854	46.9	303	24.9
6-10	870	22.0	335	27.5
11-15	508	12.9	194	15.9
16-20	285	7.2	153	12.6
21-25	180	4.6	108	8.9
26 and more	254	6.4	124	10.2
Total	3,951		1,217	

total citations. Period-wise mean age of cited literature was also calculated for both journals (documented in Table VI and Figure 2). Mean age of citations in the *PDR* for volumes from different periods remained lower than that for the *PESR*. The mean age for cumulative volumes of the *PDR* is 9.16 years compared with 12.96 years in the case of the *PESR*.

### Use of local and foreign monographic literature

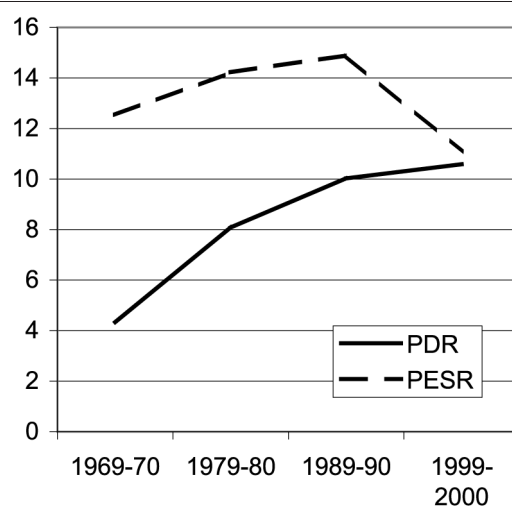
Monographic citations were further analysed to find out if they were local or foreign publications. Table VII and Figure 3 show that the authors of the *PDR* cited 69.97 per cent foreign books as compared to *PESR* authors who cited 72.81 per cent foreign books. The excessive use of foreign books might be due to the non-existence of local monographic literature.

### Most cited journals

The journal citations were further analysed to establish a list of journals mostly cited by the

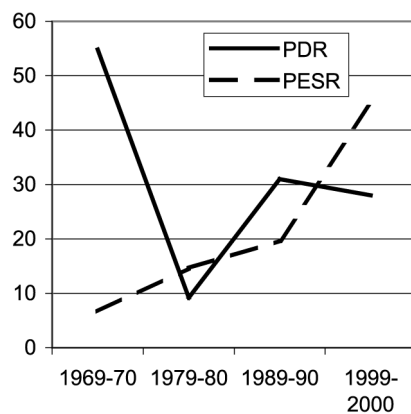
**Table VI** Mean age of the cited literature by periods

	PDR	PESR
1969-1970	4.34	12.54
1979-1980	8.09	14.22
1989-1990	10.03	14.89
1999-2000	10.59	11.08
All periods	9.16	12.96

**Figure 2** Period-wise mean age of cited literature**Table VII** Distribution of monographic citations in local and foreign publications

Period	PDR				PESR			
	Local <i>n</i>	Local %	Foreign <i>n</i>	Foreign %	Local <i>n</i>	Local %	Foreign <i>n</i>	Foreign %
1969-1970	166	54.79	137	45.21	6	6.67	84	93.33
1979-1980	28	9.18	277	90.82	18	14.63	105	85.37
1989-1990	141	30.99	314	69.01	24	19.67	98	80.33
1999-2000	219	28.01	563	71.99	110	44.72	136	55.28
Total	554	30.03	1,291	69.97	158	27.19	423	72.81

authors. Tables VIII and IX provide ranked lists of the top ten most frequently cited journals in both journals under study. It is interesting to note that the *PDR* is at number one in the list of most cited journals in both the cases. Other journals that are common in the top ten lists include *American Economic Review*, *Journal of Political Economy*, *World Development*, *Econometrica*, and *Review of Economics and Statistics*. All of these titles are published in the USA. Their frequent citations in Pakistani core economic journals show the huge impact of American literature on Pakistani literature in this field. Four of top ten journals

**Figure 3** Period-wise percentage use of local books as citations**Table VIII** Top ten journals cited in the *PDR*

Rank	Journal title	Frequency
1	<i>Pakistan Development Review</i>	376
2	<i>American Economic Review</i>	86
3	<i>Journal of Political Economy</i>	46
4	<i>World Development</i>	43
5	<i>Econometrica</i>	38
6	<i>Review of Economics and Statistics</i>	31
7	<i>Journal of Monetary Economics</i>	29
8-9	<i>Quarterly Journal of Economics</i>	27
8-9	<i>Economic Journal</i>	27
10	<i>Population Studies</i>	25

**Table IX** Top ten journals cited in the *PESR*

Rank	Journal title	Frequency
1	<i>Pakistan Development Review</i>	102
2-3	<i>Journal of Political Economy</i>	23
2-3	<i>World Development</i>	23
4	<i>American Economic Review</i>	20
5	<i>Review of Economics and Statistics</i>	16
6-8	<i>American Sociological Review</i>	13
6-8	<i>Econometrica</i>	13
6-8	<i>Pakistan Economic and Social Review</i>	13
9	<i>Economic and Political Weekly</i>	12
10	<i>Indian Journal of Agricultural Economics</i>	11

cited in the *PDR* and three cited in the *PESR* were among top five economic journals ranked by Smyth (1999) on the basis of a citation analysis of Australian journals. It is also worth mentioning that contrary to the *PDR* the self-citations of the *PESR* are very low (only 13 citations in eight volumes).

## Conclusion

Citation analysis of the core Pakistani economic journals revealed that the *PDR* has been the most cited journal. The mean score of citations per

article found from eight volumes of two core journals remained insignificantly different from each other. More than 50 per cent of the citations from both journals were single-authored. More than 50 per cent of the citations were from non-journal sources, mainly books. Although citations from online sources were seen, it was a negligible number. About 47 per cent of the total citations of the *PDR* were up to five years old compared with the citations of the *PESR* where only 25 per cent fell into this category. Most of the authors quoted foreign books as citations. There is a significant similarity in the top most cited journals in both cases. Most of the frequently cited journals were from the USA.

The citations pattern found in this study revealed that the citation of literature by economists in Pakistan is quite behind the international trends. For example, lack of journal citations might be due to the non-availability of journals in local libraries. Similarly, lack of the use of online resources shows some gaps in the orientation and training of local economists in the use of such resources. A large number of economists cite old literature. It is imperative to formally study factors that might be responsible for this sad situation. In light of such studies the facilities provided to the researchers in the field of economics can be improved.

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