

Research on Evaluation System of Academic Monographs of Humanities and Social Sciences

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Abstract. China's academic evaluation system for papers and journals has matured, but the attention to academic monographs is not high, resulting in the current academic monographs evaluation index system is relatively lacking. The evaluation system of academic monographs in humanities and social sciences is constructed by selecting scientific and reasonable evaluation indexes based on the works that have won the Chinese University Humanities and Social Science research outstanding achievement Award, and the interference of time factor on the number of citations of academic monographs is weakened by constructing the index of daily citations.

Keywords: humanities and social science academic monographs evaluation system contributory factor

1 Introduction

Research results in the humanities and social sciences take many forms, such as journal papers, conference papers, books, teaching materials, research reports, etc. From the perspective of literature use, the proportion of books cited by CSSCI source journals exceeds 50%. Compared with other forms of achievement, academic monographs have the characteristics of large amount of information, strong professionalism and lasting academic influence, reflecting the author's academic accumulation and research accumulation for many years. However, Chinese academic circles pay less attention to the evaluation of academic books in humanities and social sciences, and much less attention^[1].

Wu Fanjie^[2] analyzed the academic evaluation systems of the four major European countries. In the early stage, peer review was the main method. However, with the advent of the era of big data, traditional academic evaluation methods are being challenged as never before, and all countries begin to use data analysis tools and methods for quantitative research. In 2010, Jason Priem^[3] noted that most scholars shifted their work to the Internet, academic expression became diversified, and academic influence began to extend to social media. He proposed the concept of Altmetrics that is a measurement method that uses online academic communication data statistics to evaluate academic impact.

Zuccala^[4] found that Goodreads reader ratings were related to book citations, and that Goodreads could be used as a surrogate metric to measure the impact of academic work outside of academia. By analyzing the correlation between the number of online reviews on Amazon and the number of citations a book receives, Kousha^[5] found that the number of

online reviews reflects the social impact of a book. Zhou^[6] et al dug deeply into online reviews on Amazon website and showed that online book reviews, as an alternative measurement index, can reflect the influence of books. Torres-Salinas^{[7][6]} analyzed books published by the University of Granada between 2010 and 2016 using 18 indicators from PlumX, EBSCO's bibliometrics suite, and found that the library collection indicator was the most promising indicator for analyzing the influence of books. Piryani^[8] found that Google Scholar citations were positively correlated with Scopus citations, and Goodreads and Amazon reviews were also positively correlated.

On the one hand, most current academic monograph evaluation studies are based on the basic citations in the citation database, but ignore the interference of time factor on the citations of academic monographs. The academic influence of academic monographs can be measured more accurately by using the average daily citations index through time standardization. On the other hand, for the localization of academic monograph evaluation research, the author makes full use of the relative shortage of domestic alternative metrology resources. The evaluation index system of Chinese academic monograph constructed in this paper is helpful to enrich the citation index and alternative metrology index of Chinese academic monograph evaluation.

2 Establishment of evaluation index system

At present, there is no national award for humanities and social sciences. Chinese University Humanities and Social Science research outstanding achievement Award is the highest award for humanities and social sciences recognized by all universities. Therefore, we selected the winning works of the recent five Humanities and Social Science Research Outstanding Achievement Awards of the Ministry of Education for empirical analysis.

The evaluation of the outstanding achievement award of humanities and social sciences in universities is carried out in a centralized and independent way. According to the application form of the outstanding achievement Award of humanities and social sciences in universities, it can be seen that the evaluation of the award is mainly based on three parts: the situation of the applicant, the brief status of the achievement and the introduction of the content of the achievement. The content of the work is the most important thing, but it is difficult to quantify the evaluation of the content, the depth of research and the difficulty of understanding are difficult to quantify, advanced works may be highly valued by senior scholars, but it may be difficult for ordinary readers to understand, so this part is mainly based on expert comments, and no quantitative index planning is done for this part.

2.1 Situation of the applicant

As the author's research results, academic monograph can show the author's research ability and bring reputation to the author. In the same way, the author is also the spokesperson of the work. The knowledge and experience of a senior scholar will make the depth, breadth and foresight of his work higher than that of ordinary scholars.

In 1955, some scholars began to evaluate their personal academic using traditional bibliometric methods^[9]. In 2005, Hirsch proposed H- index, which was defined as: If n articles published by scholars are ranked in descending order of citation times, h articles have been

cited at least h times, while each of the other ($N - h$) articles has a citation frequency less than h , then h is the scholar's H- index. After h index was introduced into China, domestic scholars expanded and amended it based on the actual situation in China. "hp- c Index", "G index" and so on were proposed^[10]. In this paper, h index and G index are selected to evaluate the author's situation. The data can be obtained from Baidu Academic or CNKI.

2.2 Summary of achievements

The results profile includes three parts: publication related information, citations of the results, social impactor social benefit. Due to the lack of data on the award status of achievements, this paper does not select quantitative indicators for the award status of achievements.

Publishing houses and academic monographs are also mutually successful, and the evaluation results will affect the publishing situation to a certain extent. Because different publishing houses have different degrees of review for academic works, the situation of publishing houses also reflects the level of academic monographs to a certain extent. In this paper, H- index of publishing house, total citations of publishing house and average citations of publishing house are selected to evaluate the influence of publishing house.

In previous studies on book evaluation, researchers usually take works within a certain period of time as samples and take the citations of the works as an indicator to evaluate the works. However, due to the difference in publication time, the influential time of the works is different, which leads to the influence of the index of citations. Therefore, in this study, citations were standardized as daily average times cited (DATC). This study obtained the publication time and calculated the time interval since publication, which was used to calculate the average daily citations of the publication since publication.

$$DATC = Citations / \Delta t \quad (1)$$

Citations are the number of times a publication is cited in a database; Δt is the time interval since the publication was published. Since none of the works in the official list has a specific date, it is only accurate to the year, so assume that all works are published from the first day of the month of publication, and calculate the daily citations based on this.

Social impact or social benefit refers to the adoption, republication, republication or evaluation, etc. Here, we choose to start from the evaluation and online sales, and the evaluation conditions are selected from Douban reading score (DRS), Douban reading evaluation (DRE), Douban reading short reviews (DRSR), Douban reading reviews (DRR), the number of people who have read and expected to read (NPR), Jingdong book links (JRL), Jingdong book praise rate (JBPR) and Jingdong book evaluation (JBE).

3 Chinese University Humanities and Social Science research outstanding achievement Award

The Chinese University Humanities and Social Science research outstanding achievement Award is the highest humanities and social sciences award widely recognized in China. It is set up by the Ministry of Education to reward scholars who have achieved innovative research

results or made outstanding contributions, and encourage university researchers to strive for the development of humanities and social sciences. So far, it has been successfully held for eight sessions, and 5,579 outstanding achievements have been selected. Although the total number of prize-winning works is gradually increasing each time, it can be seen from **Fig. 1** that the proportion of prize-winning works in the works category is actually declining, while the proportion of prize-winning works in the thesis category is increasing. This indicates that scholars are beginning to prefer the output of papers with lower academic value. In order to encourage authors to produce works with higher academic value, it is necessary to improve the evaluation system of works.

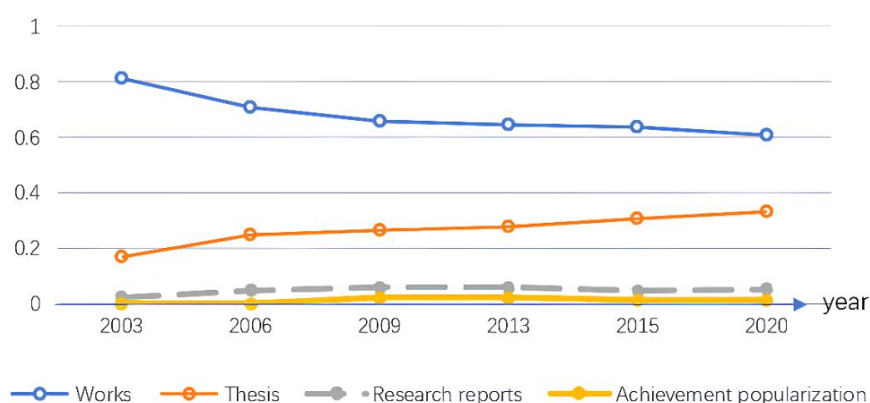


Fig. 1 The proportion of each category in each award

3.1 Data selection

From the third to the eighth sessions, a total of 4746 award-winning works were awarded, including works (including monographs, reference books, compilation of ancient books and translations), papers, research reports and popularizations. This paper studies works of the Chinese University Humanities and Social Science research outstanding achievement Award in universities, and selects the top five cited works of various disciplines in the sixth and seventh award-winning works for analysis. A total of 124 works were awarded.

In this paper, entropy weight method is used to determine the specific weight of each index. Entropy weight method is an objective weighting method, which only depends on the discreteness of the data itself, and the weight of the index is positively correlated with the degree of discreteness of the index data. The specific steps are as follows:

(1) Data standardization

Due to the large differences in the value ranges and units of different indicators, data need to be standardized pre-processed to convert the absolute values of indicators into relative values, so that the values of different indicators are in the same value range.

Suppose you are given m indicators: $X_1, X_2, X_3, \dots, X_m$, and n samples, where:

$$X_i = \{x_1, x_2, \dots, x_n\} \quad (2)$$

Assuming that the standardized values of each indicator data are: Y_1, Y_2, \dots, Y_m , where:

$$Y_{ij} = \frac{x_{ij} - \min(x_i)}{\max(x_i) - \min(x_i)} \quad (3)$$

(2) Determination of Indicator Weight

Calculate the proportion of the i sample value under index j in this index:

$$P_{ij} = Y_{ij} / \sum_{i=1}^n Y_{ij} \quad (4)$$

Calculate the entropy value of index j :

$$E_j = -\ln(n)^{-1} \sum_{i=1}^n P_{ij} \ln P_{ij} \quad (5)$$

where: $E_j \geq 0$. If $P_{ij}=0$, define $E_j=0$.

Calculate the entropy weight of index j :

$$W_j = \frac{(1 - E_j)}{m - \sum_{j=1}^m (E_j)} \quad (6)$$

The composition of specific indicators is shown in **Table 1**.

Table 1 Evaluation index system of academic monographs

First level indicators	Second level indicators	Specific indicators	Data source	Weight
Applicant	Author	Author's H-index	Baidu Academic	2.21%
		Author's G-index		2.57%
	Publishing house	H-index of the publishing house	CNKI	1.23%
		Total citations		3.16%
		Average citations		1.78%
		Daily average times cited		3.18%
	Citation situation	Number of citations by journals	Duxiu	3.47%
		Number of citations by books		3.76%
		Number of libraries with the book		1.10%
	Summary of achievements		DRS	Douban Books
DRE			12.59%	
DRSR			12.34%	
Social impact		DRR	Jingdong Reading	13.02%
		NPR		12.12%
		JRL		1.70%
		JRPR		10.84%
	JBE	7.72%		

4 Conclusion and prospect

Works are one of the most important scientific research achievements of authors, but the proportion of academic works awarded for outstanding achievements in humanities and social sciences of universities in the past five years has gradually decreased, and scholars are more inclined to produce papers with small length and short cycle. The evaluation of works can promote the dissemination of truly excellent works and encourage scholars to produce works, but the evaluation of academic monographs in humanities and social sciences is an extremely complex work. This paper selects academic works that have won outstanding achievement awards in humanities and social sciences in recent five years for empirical analysis, and constructs an evaluation index system of academic monographs in humanities and social sciences. The index includes author, publishing house, citation situation and social benefit. The entropy weight method is used to obtain the weight of each index, which makes up for the defects of the subjective and arbitrary peer review method.

There are still many shortcomings in this paper, because the selection of outstanding achievement awards in humanities and social sciences in universities is mainly expert review, so the weight of evaluation indicators should reflect the subjective opinions of experts. If the expert scores and objective entropy weight method are combined to determine the weight of evaluation indicators, the scientific and accuracy of the evaluation system will be improved.

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