A Comparative Study on Judicial Visualization in the U.S. and China.

Jiawei Zhou [a], *Chengjie* Miao [b], *Yi* Long [c*].

[a] School of Artificial Intelligence and Law, Shanghai University of Political Science and Law, Shanghai, China, 19539476973@163.com, 0009-0005-8083-9942.

[b] School of Artificial Intelligence and Law, Shanghai University of Political Science and Law, Shanghai, China, 3358463756@qq.com, 0009-0006-3686-2245.

[c] School of Artificial Intelligence and Law, Shanghai University of Political Science and Law, Shanghai, China, longyi@shupl.edu.cn, 0000-0002-6208-9560.

Abstract. The visualization of judicial statistics is a new form of judicial openness in the era of big data, which is of great significance for the public to understand judicial dynamics and maintain judicial fairness. The study finds that neither the Supreme Court of China nor the U.S. Supreme Court provides a dashboard of judicial statistics, but the frequency of data updates in the United States is quarterly, and in China, it is updated in the form of annual reports. Among the court web portals of 35 provinces (including Hong Kong, Macao, and Taiwan) in China, only 3 courts provide visualization of judicial statistics. Among the 51 state court web portals in the United States, 18 courts conduct visualization of judicial statistics. For dg.o attendees, this research offers unique insights into how the two countries approach the challenge of making judicial data accessible and understandable to the public.

1. From judicial openness to visualization of judicial statistics

As Louis Brandeis said, "Sunlight is said to be the best of disinfectants; electric light the most efficient policeman". In modern society, judicial openness brings transparency to the system. [1]Transparency is a crucial element in the judiciary to promote citizen confidence in courts and ensure fair case administration by court staff.[2] From a perspective of common sense, visualization facilitates users to intuitively understand the content of the data, and make vertical and horizontal comparisons to enhance the transparency and the efficiency of the judicial system. Marković and Gostojić think the set of statistics included in judicial visualization should at least include the results of court decisions, case registrations, archived document records, and statistics.[3]It is known from the relevant literature that the Israeli Supreme Court database is one of the few public multi-user datasets focusing on courts and judges and is very rich in judicial statistics[4]. Besides, Germany[5], the United Kingdom[6], the Netherlands[7], France[8], Switzerland[9] and Spain[10] have created dashboards for the visualization of judicial statistics.

Judicial dashboards[11] in the United States and China might keep up with this trend. In this paper, we investigate in detail the current situation of visualization of judicial statistics on the web portals of China's supreme court and provincial courts and those of the U.S. federal supreme court and state court portals, analyzing in depth the specific differences between the two countries. Then, we put forward suggestions for enhancing the level of visualization in the two countries.

As can be seen from inquiries into the laws of the two countries, both the United States and China have laws and

regulations at the central level that require the disclosure of judicial statistics at all levels of the courts, with the specific requirement that they be disclosed on an annual basis. In China, *the Opinions on Further Deepening Judicial Disclosure* proposes the disclosure of judicial statistics in the form of a bulletin, and in the United States, the *Disclosure of Electronic Records* provision requires government agencies to make better use of electronic processing to request information.

2. Current Status and Problems of Visualizing Judicial Statistics in China and the U.S.

The research process was as follows: in the first step, the three researchers divided their work and queried the data dashboards on the websites of the central and local courts according to a uniform standard; in the second step, a senior researcher reviewed all the data; and in the third step, the data were updated.

2.1 Overview of the central-level judicial dashboard in China and the U.S.

According to the research, China's Supreme People's Court portal makes judicial statistics public in the form of an annual report but does not provide a visual interactive function, while the website of the United States federal courts provides quarterly updated case data.

2.2 Overview of the Provincial and State-level Judicial Dashboard in China and the U.S.

Below, we compare the visualization of Chinese and U.S. court statistics through the eight most typical aspects when evaluating dashboards. Specific data are presented in Tables 1 & 2.

(1) Whether data are province-wide (state-wide) integrated

The integration of judicial statistics enables the data of courts at all levels to be displayed through a unified platform, which not only facilitates the search of judicial data by various groups of people but also accelerates horizontal comparison.

(2) Data are displayed with several dashboards

Provincial courts in China mostly use a single dashboard on the portal, while U.S. state courts mostly use a combination of multiple dashboards. The more dashboards of judicial statistics, the more detailed classification standard of the data, and the easier it is for all kinds of people to retrieve the data. However, the overly cumbersome classification standard of judicial statistics increases the difficulty of the statistical work.

(3) Whether the data comes from the local self-construction

In the author's view, the unified construction of the judicial statistics platform gives full play to the central court's function of leadership for local courts, while reducing the burden of local courts on the construction of statistical platforms, and helps to unify statistical standards to achieve comparative analysis. However, the statistical platform built by the local courts may be more flexible and innovative.

(4) Whether the data are from a single department

The advantage of multisectoral statistics over single-sector statistics is that the statistical process tends to be characterized by "objectivity, comprehensiveness, and mutual supervision". It is important to restrain the power of single-sector openness of judicial statistics, increasing the credibility of the whole system.

(5) Update Frequency

The Update frequency in China's provincial courts is significantly lower than the one in the U.S. state courts. The higher the update frequency, the more it can reflect the "dynamic" character of local judicial statistics. High-frequency updates of judicial statistical data can enhance judicial transparency and strengthen judicial authority.

(6) Lowest Court Level

The judicial data of each judge in the lowest court can be displayed to the public. The authors believe that each citizen can not only feel the importance of the local judicial system while the judge is coping with cases but also better realize justice for the people when the judicial statistics open towards the level of individual judges.

(7) Case Status

Among provincial courts in both China and the U.S., there are differences between the divisions of case status. The classification of case statuses in judicial statistics should be tailored specifically to each country and align with the legal and judicial background of the country.

(8) Availability of Before-and-After Comparison of Data

Only one court in China (Zhejiang Province[5]) has time comparisons of judicial statistics. The provision of the comparisons of judicial statistics is conducive to the understanding of the public in the operating trends of the judicial system. It also facilitates the analysis of data compiled by professionals and makes it easier for judicial management to formulate scientific and reasonable countermeasures.

3. Suggestions for visualization of judicial statistics

Three recommendations for Chinese courts are as follows:(1) Legislating regulations on the openness of judicial statistics and establishing a standardized platform for the visualization of judicial statistics nationally. (2) Establishing a sound mechanism for disclosure upon request in the judicial system.

Three recommendations for U.S. courts are as follows: (1) Promoting the construction of visualization dashboards to popularize them nationwide. (2) Constructing a common standard for judicial data disclosure to facilitate public comparisons.

4. Conclusion

The visualization of statistical data in the courts is a new form of disclosure in the era of big data. It plays a crucial role in helping the public understand the court's operations and upholding justice. Currently, disparities exist between Chinese provincial courts and American state-level courts in terms of statistical data visualization. These differences are primarily manifested in the quantity of data dashboards, the frequency of data updates, the number of case classifications, and the case statuses presented. Both countries still have a long journey ahead in building effective dashboards for their courts.

Tab. 1 - Comparison of the construction of visualization dashboards of judicial statistics in China's provincial courts.

Provincial Courts	Availability of data dashboards	Whether the data integrated across the province	Number of visualization dashboards	Whether any lower courts build their data platforms	Is it a single figure for a sector	Data Sheet Showing Earliest Year	Frequency of data display	The dashboard shows the lowest court tier	Case Status	Availability of data for before and after comparisons
Macao Special Administrative Region[12]	Yes	yes	5	No	No	2000	Current year by month, previous years by year	Primary Court	Transferred from the previous month, distributed in the current month, the total number of cases, closed in the current month, transferred to the next month	No
Beijing[13]	Yes	Yes	12	No	No	2024 (current year)	Day	District People's Court	Received, Closed	No
Zhejiang Province[5]	Yes	Yes	3	No	No	2021	Indeterminate	Intermediate People's Court	Application filing, service of documents, execution node openness	Yes

Tab. 2 - Comparison of the construction of visualization dashboards for judicial statistics in U.S. state courts.

State of the Courts	Availability of data dashboards	Whether data are integrated statewide	Number of visualization dashboards	Whether any lower courts build their data platforms	Is it a single figure for a sector	Dashboard showing earliest years	Frequency of Data Display	The dashboard shows the lowest court tier	Case Status	Whether there is a before and after comparison of the data
New York[14]	Yes	Yes	8	No	No	2019	Monthly	County	Cases filed, closed, pending, trial started	Yes
Massachusetts[15]	Yes	Yes	23	No	No	2021	Weekly	County	None	Yes
California[16]	Yes	Yes	1	No	No	2014	Annually	County	Filings, Dispositions	Yes
North Dakota[17]	Yes	Yes	5	No	Yes (Department of Corrections and Rehabilitation)	2013	Annually	County	Prison, Probation, Parole	Yes
Illinois[18]	Yes	Yes	5	Yes	No	2023	Daily	County	Investigations, Investigation w/Detainable offense, Petitions Filed, Granted, Denied, Hearings Not Completed	No
New Jersey[19]	Yes	Yes	3	No	No	2022	Monthly	County	Filings, Resolutions	Yes
Texas[20]	Yes	Yes	6	No	Yes (Bail	2023	Monthly	County	Failed To Appear,	No

State of the Courts	Availability of data dashboards	Whether data are integrated statewide	Number of visualization dashboards	Whether any lower courts build their data platforms	Is it a single figure for a sector	Dashboard showing earliest years	Frequency of Data Display	The dashboard shows the lowest court tier	Case Status	Whether there is a before and after comparison of the data
					Data)				Violated Condition, Committed Offense	
Oregon[21]	Yes	Yes	49	No	No	2017	Monthly	County	Incarcerated, Probation, Parole	Yes
Pennsylvania[22]	Yes	Yes	13	No	No	2011	Annually	County	Cases Pending at the Beginning of the Year, New Cases Filed, Arbitration Appeals, Cases Transferred ln, Returned to Active, Subtotal: Cases Available for Processing, Cases Processed, Cases Pending at the End of the Year	Yes
Ohio[23]	Yes	Yes	7	Yes	No	1997	Monthly or Quarterly (Probate	City, County (uploaded	Filed, on trial, closed	Yes

State of the Courts	Availability of data dashboards	Whether data are integrated statewide	Number of visualization dashboards	Whether any lower courts build their data platforms	Is it a single figure for a sector	Dashboard showing earliest years	Frequency of Data Display	The dashboard shows the lowest court tier	Case Status	Whether there is a before and after comparison of the data
							Court)	by individual judges)		
Georgia[24]	Yes	Yes	7	No	No	2020	Annual	County	Filed, Closed	Yes
North Carolina[25]	Yes	Yes	4	No	No	2023	Monthly	County	Filed, disposed, pending	No
Florida[26]	Yes	No	2	No	No	2019	Quarter	District	Cases Filed Last Quarter, Cases Filed YTD, Cases Disposed Last Quarter, Cases Disposed YTD	No
Arizona[27]	Yes	Yes	13	No	No	2017	Monthly	County	Filed, closed, pending	Yes
Michigan[28]	Yes	Yes	9	No	No	2006	Annually	County	Filed, closed, pending	Yes
Oklahoma[29]	Yes	Yes	1	No	Yes (child adoption only)	2023	Monthly	District	None	No
Kentucky[30]	Yes	Yes	1	No	No	2003	Monthly	County	Filed, Closed	Yes
Idaho[31]	Yes	Yes	12	No	No	2019	Monthly	County	Not Yet Disposed, Conviction, Acquittal, Dismissal,	No

State of the Courts	Availability of data dashboards	Whether data are integrated statewide	Number of visualization dashboards	Whether any lower courts build their data platforms	Is it a single figure for a sector	Dashboard showing earliest years	Frequency of Data Display	The dashboard shows the lowest court tier	Case Status	Whether there is a before and after comparison of the data
									Deferral, Other	

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