“ ”

D922.294 A 2096-6180 2023 06-0116-22

empirical analysis of legal issues

1 2

21BFX109

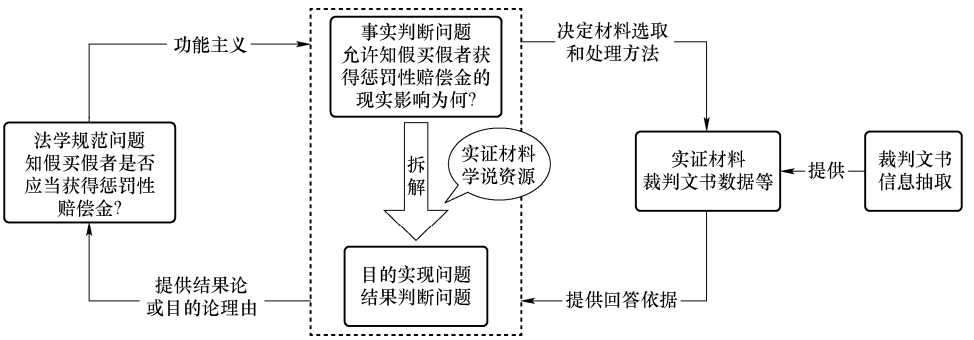
1

2020 4 61 – 71

2022 4 201 – 224

2 DNA

Theodore Eisenberg, *Empirical Methods and the Law*, 450 Journal of the American Statistical Association 665, 665(2000).



1

12

13

12 2015 6 77

13 2020 4 41

21

22

23

24

25

26

27

28

29

30

21

2000 4 30

22 2013 4 16–17

23 2018 4 151

24 2015 3 151–160

1 459 2016 1 140–162 206–207

48.1% 89.37%

25 2021 5 167–172

26 2022 4 221

27

28 2009 175 145–152

29

2021 5 146–162

30

2017 2 69

[31] 2022 9 5 https://wenshu.court.gov.cn/ 135 704 431

[32]

[33]

[34]

[35]

[36] [37]

[38]

31

2021 5 163 – 176

2021 5 89 – 110

32 2019 4 113 – 114

33 2016 19 4 3

34 George L. Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 The Journal of Legal Studies 1, 14 – 37 (1984). Eric Helland, Daniel Klerman & Yoon-Ho A. Lee, *Maybe There Is No Bias in the Selection of Disputes for Litigation*, 174 Journal of Institutional and Theoretical Economics 143, 143 – 170 2018 . Jonah B.Gelbach, *Maybe There Is No Bias in the Selection of Disputes for Litigation: Comment*, 174 Journal of Institutional and Theoretical Economics 171, 171 – 176 2018 .

35 2019 6 128 – 133

36 Benjamin L. Liebman et al., *Mass Digitization of Chinese Court Decisions: How to Use Text as Data in the Field of Chinese Law*, 8 Journal of Law and Courts 177, 185 – 190 2020 2018 6 90 – 102 2018 4 35 – 47

37 2019 6 133 – 135

38 2016 19 16

39 40

41 42

43

44

45

39 131
2022 1 82 – 90
40 2022 2 19
477 2022 4 4 421
41 2018 2 115
42
2015 11 83 – 87
2022 2 91 – 106
43
micro – F1 85.48% Feng Yao et al., *LEVEN: A Large-Scale Chinese Legal Event Detection Dataset*, Findings of the Association for Computational Linguistics: ACL 2022, 188 (2022).
44 selection bias selection effect
45 M 13 2014 627

46

52

53

54

55

56

57

58

52 1993 49 2013
55 1 2009 96 2 2015 148 2
2019 144 3
53 2000 4 115 – 116
54

2019 3 93 – 112
55

2017 2 300 – 339
56 2013 28 3

2020 2021 2021 17 3
2013 23
2014 5990
2017 181 2014 5
1 2016 3
2016 77 2
57 2020 1 160 – 172 196
2023
5 146 – 166 2023 5 19 – 31
58

2017
2 314

2023 11 30

10

59

1

2

3 4

60

59

C

2018 15 135 – 142

60

5

61

/ / /

62

63

64

61

62

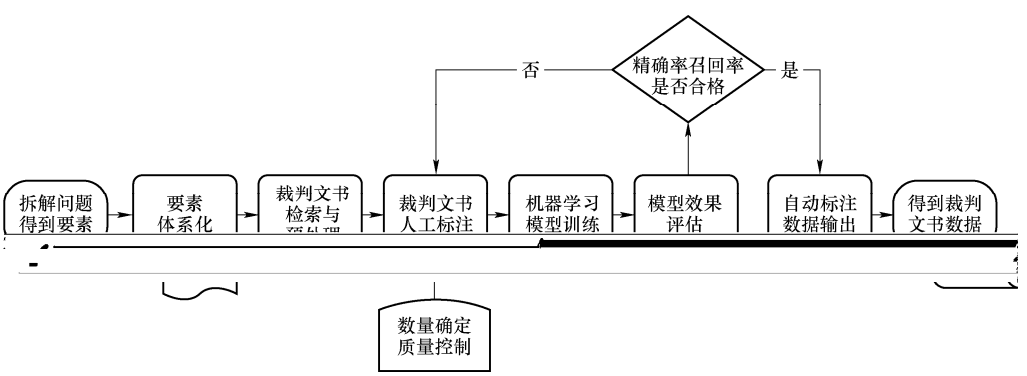
63 2022 4 218 – 220

64 2017 2 338 – 339

65

66

2



2

65 2020 1 169 – 172

66

2017 3 66

67

192

68

2020

6 10

1

2 69

70

67 2020 2 69

68 1993 49 2013 55 1 2009

96 2 2015 148 2 2019 144 3

69 Ron Kohavi & Foster Provost, *Glossary of Terms*, 30 Machine Learning 271, 272 1998 .

70 2016 4 199 240–241

3 [71]

[72]

[73]

[74]

+

[75]

1.

71

2016 221

72

2019 4 115 – 121

2021 6 66 – 67

73

2016 1

74 95%

75 2018 2 51

76

Legal Event Detection LED

150 77

6 000 78

6 000

5 406

101 262

2.

garbage in garbage out

79

1

2

3

80

4

81 5

76 2016 3－4

77 Feng Yao et al., *LEVEN:A Large－Scale Chinese Legal Event Detection Dataset*, Findings of the Association for Computational Linguistics: ACL 2022, 189 (2022).

78 150 6 000 2.5% 6 000

79 2014 376

80 Kappa Alpha

Cohen's Kappa

Feng Yao et al., *LEVEN:A Large-Scale Chinese Legal Event Detection Dataset*, Findings of the Association for Computational Linguistics: ACL 2022, 187 (2022).

81 385

385 95% 5%

2 2014 137

82

Fleiss’s Kappa

83

84

85

86

1

82

83 Artstein R, *Inter-Annotator Agreement*, in Nancy Ide & James Pustejovsky eds., Handbook of Linguistic Annotation, Dordrecht Springer, 2017, p. 297 – 313.

84 2021 3 121

85 Feng Yao et al., *LEVEN: A Large-Scale Chinese Legal Event Detection Dataset*, Findings of the Association for Computational Linguistics: ACL 2022, 188 (2022).

86 2016 23 – 27

1

		1 Positive	0 Negative
	1 Positive	TP True Positive	FN False Negative
	0 Negative	FP False Positive	TN True Negative

Precision P Recall R F_1 F_1-score F_1 F_1

1

$$P = TP / (TP + FP)$$

$$R = TP / (TP + FN)$$

$$F_1 = (2 \times P \times R) / (P + R)$$

F_1 F_1 0.95 [87]

F_1

/ – /

F_1 90.1%

F_1 95%

1

87 2021 194

[88]

3 2012 2019

2014 2014 2017

2018 2014 1

2015 6 [89] 2014

2018

[90] 3 2020 1

[91]

88

Donald J. Treiman

2012 SPSS 2 2015

89 2014 1 1 13

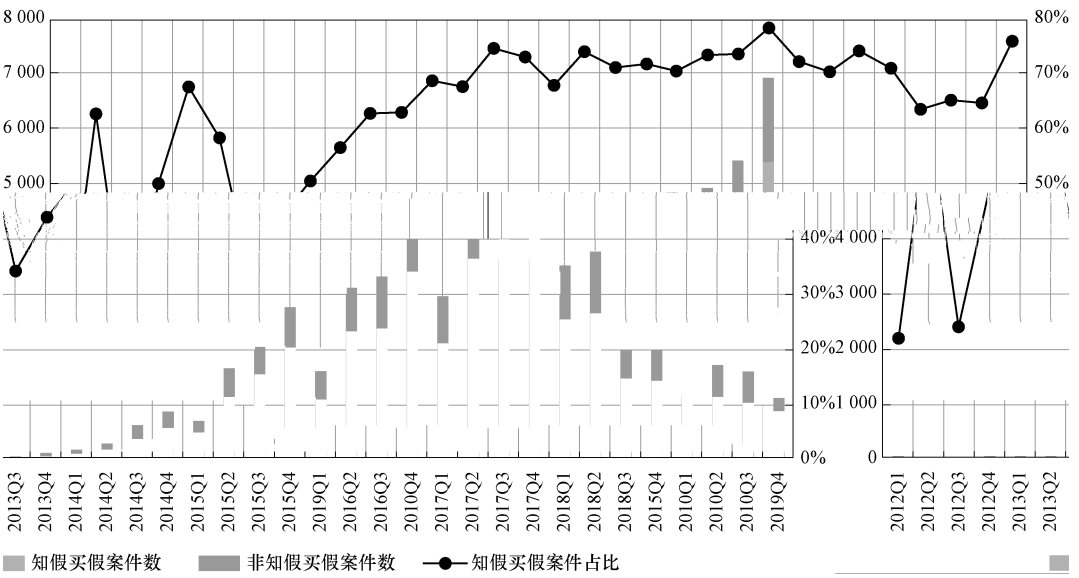
2015 6 31

2020 9 2 001

90 2017 39.4% 90

2019 6 128 – 138

91 2016 19 4



3 2012 2019

15.8%

92

48.4% 93

37.1%

92

2021 17 3

4.2%

10.9%

55

13.6%

93 2017 0106

19763 2017 12 2284

2016 0302 3012

5

75.34%

\ \ \ \

2 0.92 0.72

72%

2

	Precision	Recall
\ \	1	1
\ \ \ \	0.92	0.72

2019 12 31 59 147

2012 2019 59 036

2012 2019

3 2012 2013 2012

2015 70% 2014

3

4 2012 2019

60% 70%

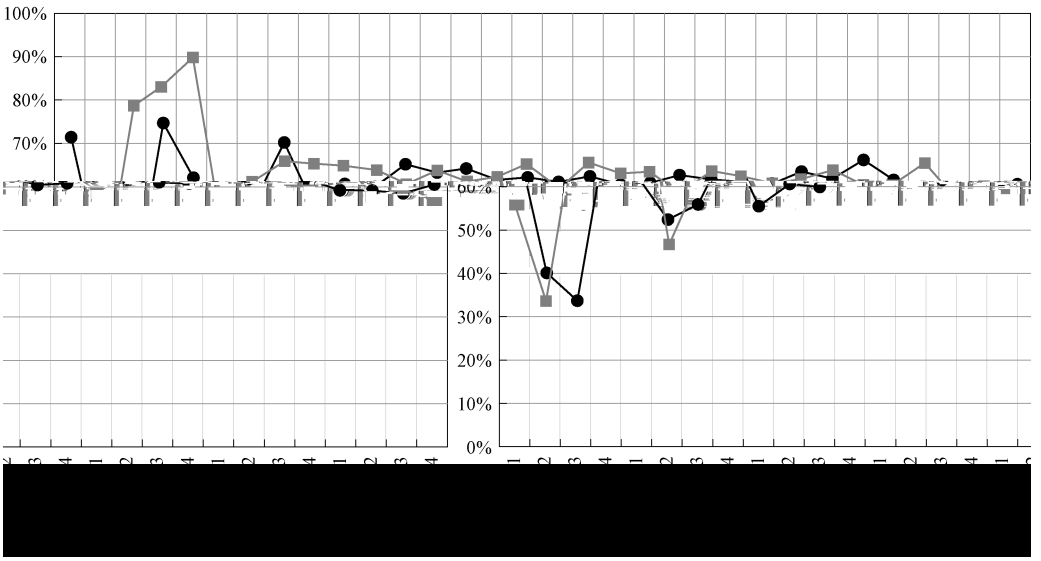
61.7% 62.3%

$$N = nP / R$$

$N =$ $n =$ $P =$ Precision $R =$ Recall

78.8%

79.6%



4 2012 2019

80%

55

148

The Empirical Legal Research Method Based on Judgement Data

—An Example from Intentional Purchasing of Defective Products

XIONG Bingwan WANG Junle

Abstract: Taking intentional purchasing of defective products as an example, this article comments on the empirical legal research method, through analyzing data extracted from judgments of punitive damages. Empirical legal research is a complete cycle, starting from normative jurisprudential problems, guided by teleology or consequentialism, deconstructing questions or concepts with problem orientation, theoretical resource and empirical evidence. It connects the legal problem with empirical information, and in turn analyzes facts better using empirical material, with the purpose of resolving relevant legal problems. Judgements are essential empirical materials. When conducting empirical researches with a large number of judgements, information can be extracted with precision from the original judgments via technologies like machine learning. At the same time, it should be noted that judgments are important yet limited representations of the legal practice activities, and it is necessary to work cautiously when using judgements for data analysis in empirical research, by assessing the validity of data rigorously and taking alternatives flexibly. Just like other field of scientific inquiry, empirical legal research does not offer a conclusive determination of the empirical world. It pursues an interpretation with higher probability and develops continuously with an open attitude.

Keywords: Empirical Research; Judgments; Information Extraction; Punitive Damages; Intentional Purchasing of Defective Products