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The relevance of impact: bibliometric-enhanced legal information retrieval

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Appendices

Appendix A

Composition of search results

Documents and positions as retrieved from Leiden Law School data set.

For the hierarchy level of the court, the newness of the document, and the authority of the source a three-point scale is used. For all other factors the presence or absence of the factor in the result is shown.

A.1 Example query 1

Query: ‘Tarieven deskundigenonderzoek’ Translated: ‘Fees expert witnesses’

Total number of results: 4945

Question 1:

Option 1: Recency (1), Legal hierarchy (3)

Option 2: Recency (2), Legal hierarchy (2)

Question 2:

Option 1: Title relevance (y), Recency (3)

Option 2: Title relevance (n), Recency (1)

Question 3:

Option 1: Legal hierarchy (1), Bibliographical relevance (n)

Option 2: Legal hierarchy (2), Bibliographical relevance (y)

Question 4:

Option 1: Source authority (1, Asser, T&C), Title relevance (n)

Option 2: Source authority (3, blog, news), Title relevance (y)

Question 5:

Option 1: Source authority (1, Asser, T&C), Document type (n)

Option 2: Source authority (2, mid), Document type (y)

Question 6:

Option 1: Source authority (2, mid), Authority author (n)

Option 2: Source authority (3, blog, news), Authority author (y)

Question 7:

Option 1: Document type (y), Bibliographical relevance (n)

Option 2: Document type (n), Bibliographical relevance (y)

A.2 Example query 2

Query: ‘vernietiging overeenkomst terugwerkende kracht’ Translated: ‘voidable contract retroactive effect’

Total number of result: 1325

Question 1:

Option 1: Recency (2), Annotated (n)

Option 2: Recency (3), Annotated (y)

Question 2:

Option 1: Source authority (2, mid), Authority author (n)

Option 2: Source authority (3, blog, news), Authority author (y)

Question 3:

Option 1: Legal hierarchy (1), Annotated (n)

Option 2: Legal hierarchy (3), Annotated (y)

Question 4:

Option 1: Authority author (y), Recency (3)

Option 2: Authority author (n), Recency (1)

Appendix B

Queries and Seed Documents

Table B.1: Queries that we selected to sample documents for our dataset, and the IDs of the corresponding documents.

Query	DocID
Cancun	12923916
ECLI:NL:HR:2014:948	12981736
JAR 2014/298	14290648
Zalco	12871782
Berzona	13580788
ECLI:NL:HR:2014:3351	14223358
ECLI:NL:HR:2014:3077	14145097
Coface/Intergamma	12827114
NJ 2014/268	13238467
NJ 2014/62	12701453
Bescheidenheid en moed	14151738
Informatieverstrekking aan derden in het licht van goed werkgeverschap: is zwijgen de norm?	13002758
Preventieve hechtenis in Veen	12987162
de andere kant van de ZSM-medaille	13330606
TRA 2014/75	13800385

TAP 2014/1	12654375
hoe verder met de klachtplicht	12538900
Klaarheid over het Clearing House	14003488
We zijn geen padvindes: een verkennend onderzoek naar de criminele carrières van leden van een procent motorclubs	14121997
schikken in het nieuwe ontslagrecht	13697909
Enkele aspecten van cao-recht	12654376
Het nieuwe jeugdstelsel en de jeugdbescherming	14013961
wat is er mis met een vrijspraak	14331724
Houdt de WWZ voldoende rekening met de contractuele grondslag van het cao-recht?	14124128
WFR 2014/1067	13705093
WFR 2014/1168	13835404
Waarheidsvinding in de jeugdzorg	12926733
NJB 2014/2056	14177758
De roekeloze automobilist	12702866
TRA 2014/76	13800386
Daar gaan we weer? Het concurrentiebeding revisited	13211319
De Vrijgestelde beleggingsinstelling	14309602
NJB 2014/1139	13235698
is de staat aansprakelijk voor klimaatverandering	12685430
de procedure na cassatie en verwijzing	14165599
het geheim van raadkamer	12987652
ArbeidsRecht 2014/53	14124136
Curator en overwaardearrangement	22171998
NTB 2014/3	12707423
Naar een vervanging van de unus-testisregel van artikel 342 Sv	13241348
Partneralimentatie in de praktijk: is maatwerk mogelijk?	14226701
Rangwisseling pandrecht door eigenlijke achterstelling	13627420
TFO 2014/134.1	13400193
Arbeidsrecht 2014/21	12882340
Arbeidsrecht en onderwijs	12660424

Cessie- en verpandingsverboden: nieuw arrest, nieuwe problemen	13361780
De civielrechtelijke aansprakelijkheid voor schade veroorzaakt door een autonome auto	14111819
FIP 2014/360	14340903
Het doel van garanties bij bedrijfsovernames: informatie of risico	13570943
TAP 2014/4	12654373
WFR 2014/1384	14154576
heeft het bw een politieke kleur	12658261

Appendix C

Seed Documents and Data

Table C.1: Results: the usage and citations for the 52 analyzed documents. ‘N-S’ refers to non-scholarly/non-scholars and ‘Schol.’ refers to scholarly/scholars. The first 42 lines are journal articles, the 10 lines below are legal cases.

DocumentID	Classification on Document Type	Schol. Affiliations	Final Classification	Schol. Citations	N-S Citations	Usage Schol.	Usage N-S ¹
14151738	Non-scholarly	0	Non-scholarly	1	5	9	24
12987162	Scholarly	1	Scholarly	1	2	138	17
13330606	Scholarly	1	Scholarly	1	8	13	20
13800385	Non-scholarly	0	Non-scholarly	0	20	60	91
12654375	Non-scholarly	0	Non-scholarly	9	136	164	73
12538900	Scholarly	0	Non-scholarly	4	38	58	50
12654376	Non-scholarly	0	Non-scholarly	0	5	101	114
14013961	Non-scholarly	0	Non-scholarly	0	26	89	23
13705093	Non-scholarly	0	Non-scholarly	0	19	2	17
13835404	Non-scholarly	0	Non-scholarly	0	3	34	6
12926733	Scholarly	1	Scholarly	1	13	77	13
14177758	Scholarly	1	Scholarly	1	15	116	88
12702866	Non-scholarly	1	Non-scholarly	8	16	484	45
13800386	Non-scholarly	0	Non-scholarly	0	16	33	64
13211319	Non-scholarly	0	Non-scholarly	0	14	241	168
14309602	Non-scholarly	0	Non-scholarly	0	49	75	37
13235698	Non-scholarly	0	Non-scholarly	0	2	18	10
12685430	Scholarly	0	Non-scholarly	7	18	49	17

14165599	Non-scholarly	0	Non-scholarly	0	14	4	5
12707423	Scholarly	1	Scholarly	5	12	159	49
14226701	Non-scholarly	0	Non-scholarly	0	2	8	13
13627420	Scholarly	0	Non-scholarly	9	51	64	283
13400193	Non-scholarly	0	Non-scholarly	2	57	63	118
13361780	Scholarly	1	Scholarly	2	8	48	35
14340903	Non-scholarly	0	Non-scholarly	1	13	34	18
12654373	Non-scholarly	0	Non-scholarly	1	13	54	32
14154576	Non-scholarly	0	Non-scholarly	0	11	62	5
12658261	Scholarly	1	Scholarly	1	1	12	5
13002758	Non-scholarly	0	Non-scholarly	0	0	165	72
14003488	Scholarly	1	Scholarly	0	0	28	9
14121997	Scholarly	1	Scholarly	0	0	41	94
13697909	Scholarly	1	Scholarly	0	0	67	88
14331724	Scholarly	2	Scholarly	0	0	164	16
14124128	Non-scholarly	0	Non-scholarly	0	0	66	69
12987652	Non-scholarly	0	Non-scholarly	0	0	3	26
14124136	Non-scholarly	0	Non-scholarly	0	0	73	295
22171998	Non-scholarly	0	Non-scholarly	0	0	16	11
13241348	Scholarly	1	Scholarly	0	0	157	31
12882340	Non-scholarly	0	Non-scholarly	0	0	64	20
12660424	Non-scholarly	0	Non-scholarly	0	0	86	36
14111819	Non-scholarly	0	Non-scholarly	0	0	108	18
13570943	Scholarly	1	Scholarly	0	0	42	95
12981736	Non-scholarly	0	Non-scholarly	9	134	143	42
14290648	Non-scholarly	0	Non-scholarly	1	65	99	48
12871782	Non-scholarly	0	Non-scholarly	1	49	20	108
13580788	Non-scholarly	0	Non-scholarly	2	10	18	7
14223358	Non-scholarly	0	Non-scholarly	0	17	4	7
14145097	Non-scholarly	0	Non-scholarly	3	179	48	28
12827114	Non-scholarly	0	Non-scholarly	60	554	177	164
13238467	Non-scholarly	0	Non-scholarly	11	158	276	34
12701453	Non-scholarly	0	Non-scholarly	5	28	54	17
14281373	Non-scholarly	0	Non-scholarly	4	1155	164	362

Appendix D

Baseline and degraded ranking

This table shows the the difference between the baseline ranking and the degraded ranking. Each row in the table represents one query. Each ranking shown was 10 documents. Each number in the column corresponds with the number of documents for that query that was ranked higher or lower in the degraded model, documents that were not present in the degraded model but replaced by another document, and the number of documents that remained in the same position.

QueryID	Moved Up	Moved Down	Document Replaced	Same Position
1	1	2	2	5
2	3	4	1	2
3	1	6	2	1
4	1	4	3	2
5	0	4	6	0
6	0	2	8	0
7	0	2	6	2
8	2	2	1	5
9	3	4	1	2
10	2	3	3	2

11	2	3	4	1
12	4	2	2	2
13	2	3	4	1
14	1	1	1	7
15	1	4	4	1
16	1	2	5	2
17	0	5	4	1
18	1	4	3	2
19	1	3	1	5
20	3	3	1	3
21	1	3	2	4
22	3	3	1	3
23	4	3	1	2
24	0	1	4	5
25	1	1	2	6
26	1	2	3	4
27	0	7	2	1
28	2	1	2	5
29	1	4	3	2
30	3	2	3	2
31	3	2	3	2
32	0	3	3	4
33	3	4	3	0
34	1	4	2	3
35	2	3	3	2
36	0	7	3	0
37	2	0	2	6
38	0	0	10	0
39	2	1	3	4
40	1	6	3	0
41	2	3	4	1
42	0	6	4	0
43	0	6	2	2
44	0	2	6	2

45	0	0	10	0
46	1	0	9	0
47	3	3	2	2
48	3	0	2	5
49	0	5	3	2
50	2	1	1	6
51	0	2	2	6
52	5	1	3	1
53	3	2	2	3
54	1	3	5	1
55	2	5	2	1

Table D.1: The number of the documents from the top-10 that changed position in the degraded ranking as compared to the baseline ranking.

Appendix E

Example of Survey Question

ECLI:NL:GHAMS:2019:1693 - Gerechtshof Amsterdam - 10-5-2019 - Hoger beroep - Strafrecht Overtreding gebiedsverbod. Vrijspraakverweer; onvoldoende duidelijk welke straten onder het verbod vielen.    	✓
Gst. 2018/125 - Met noot - Rooij van, M. e.a. - Raad van State - 28-3-2018 Toepasselijkheid onschuldpresumptie gebiedsverbod art. 172a Gemeentewet. (Amsterdam) <u>ECLI:NL:RVS:2018:1043</u> <u>JOM 2018/319</u> <u>VIND Bestuursrecht 2018</u> Vindplaatsen    	✓
AB 2019/141 - Met noot - Brouwer, J.G. e.a. - Rechtbank Midden-Nederland - 24-5-2018 Doodsbedreiging ernstige verstoring openbare orde; gebiedsverbod rondom woonwagen. <u>ECLI:NL:RBMNE:2018:2287</u> <u>VIND Bestuursrecht 2018</u> Vindplaatsen    	✓
ECLI:NL:RBLIM:2018:9320 - Rechtbank Limburg - 3-10-2018 Vovo hangende bezwaar. Verweerder heeft eerder een gebiedsverbod aan verzoeker opgelegd op grond van artikel 172a van de Gemeentewet. De voorzieningenrechter heeft het vorige besluit geschorst, omdat dit een deugdelijke motivering ontbeerde. Hierna h [...]    	✓
ECLI:NL:RBLIM:2018:8273 - Rechtbank Limburg - 31-8-2018 - Voorlopige voorziening - Bestuursrecht Vovo hangende bezwaar. Verweerder heeft verzoeker een gebiedsverbod op grond van artikel 172a van de Gemeentewet opgelegd voor twee gebieden in Heerlen, omdat hij structureel overlast heeft veroorzaakt en de openbare orde heeft verstoord. Het opleggen [...] Vindplaatsen    	✓
ECLI:NL:RBGEL:2018:4774 - Rechtbank Gelderland - 24-10-2018 - Eerste aanleg - enkelvoudig - Civiel recht Verbintenissenrecht. Onrechtmatige overheidsdaad. Nalaten adequaat optreden tegen strafbare feiten waarvan eisers slachtoffer zijn geworden en die hen tot verhuizing hebben gedwongen. Veiligheidsgarantie. De vorderingen worden afgewezen. <u>AR 2018/5887</u> <u>JA 2019/6</u> <u>PS Updates 2018/947</u> Vindplaatsen    	✓
ECLI:NL:RVS:2018:2112 - Raad van State - 27-6-2018 - Hoger beroep - Bestuursrecht Bij besluit van 13 april 2016 heeft de burgemeester aan [appellant] een gebiedsverbod opgelegd voor de duur van 3 maanden. <u>VIND Bestuursrecht 2018</u> Vindplaatsen    	✓
ECLI:NL:GHAMS:2018:3267 - Gerechtshof Amsterdam - 6-9-2018 - Hoger beroep - Strafrecht Opzettelijk handelen in strijd met het in artikel 2 onder C van de Opiumwet gegeven verbod.diefstal door twee of meer verenigde personen. opzettelijk niet voldoen aan gegeven bevel.    	✓
Gst. 2012/67 - Met noot - Berkouwer, E.C. e.a. - Rechtbank Amsterdam - 3-4-2012 Zorgvuldige dossieropbouw is essentieel voor de onderbouwing van een art. 172a Gemw-bevel en de rechterlijke toets. <u>AB 2012/174</u> <u>ECLI:NL:RBAMS:2012:BW1140</u> <u>VIND Bestuursrecht 2013</u> Vindplaatsen    	✓
ECLI:NL:GHAMS:2018:3386 - Gerechtshof Amsterdam - 2-7-2018 - Hoger beroep - Strafrecht Overtreding gebiedsverboden, wederspanningheid en diefstal. Geldige dagvaarding. Hulpverleningskader dat in een andere strafzaak via bijzonder voorwaarden is geïndiceerd voortzetten.    	✓

Appendix F

Curriculum Vitae

Gineke Wiggers was born in Hilversum, the Netherlands, in 1988. From 2006 to 2009 she studied european law with a minor in Dutch law at Maastricht University, and in 2011 she obtained a master's degree in Dutch law from the same university. Her master's thesis was entitled The Potential Influence of the Google Book Settlement on Dutch Copyright Holders.

After graduating from university she applied for a PhD, and learned how not to write a research proposal. She has worked as a legal assistant, publishing assistant, customer service agent and business analyst. From her position as business analyst at Legal Intelligence she came up with a new and improved research proposal and submitted it for a PhD in law and data science at Leiden Law School, Leiden University. She started her PhD in 2017, conducting research at eLaw and the data science research program, whilst she continued to work at Legal Intelligence.

Her work has been published in Legal Information Management, proceedings of the European Conference on Information Retrieval, the BIR workshops and the Nederlands Juristenblad.

Appendix G

Acknowledgements

I would like to thank my supervisors, Gerrit-Jan Zwenne and Suzan Verberne, for their support. Aside from all their valuable feedback, they have provided me with two insights that have helped me get this done: (1) the best theses are the ones that are done, and (2) the end product of a PhD is a researcher, not a thesis.

I want to thank the eLaw family for supporting me. Everyone at eLaw is incredibly kind and motivated, making it an amazing place to work. I especially want to thank Pieter for providing me with good coffee and Jenneke for all the moral support.

The Data Science Research Program is an amazing group of PhD students. I feel truly blessed to have been able to work alongside a group of such smart, talented and fun people. I have thoroughly enjoyed the foosball, pub-quizzes, nachos and murder mystery parties. I have learned more about archeology, deep-vein thrombosis, sign language, whiskey and t-SNE maps than I ever imagined. I have also learned programming in Python, and thanks to Wouter now know a little about statistics. Of which I, as an LL.M., am quite proud.

Roel van den Burg has been of tremendous value in this research. He helped me with the second survey and wrote an incredible master thesis about legal IR. I would also like to thank Arjen de Vries for his valuable

insights. Alan Hanbury, my ECIR doctoral consortium mentor helped me realise that I needed to go back to the basics with regards to evaluation methods. I want to thank Marc van Opijnen for providing feedback on my very first paper. The BIR, Jurix and legal AIIA communities have been welcoming and inspiring. I look forward to in-person meetings again.

This thesis would not have been possible without the support and data of Legal Intelligence. I particularly want to thank Laurens and Roderick for encouraging to apply, Pieter and Tjerk for their help through the process, and Sjoerd and Stephanie for their endless cheerleading.

Wouter van Loon not only helped me with the statistics in this research, but has also been an endless supporter. For me, he is the best thing I gained from this PhD. I look forward to 'walking with dr. Wouter and dr. Wiggers'.

Last, but certainly not least, I want to thank my family and friends. For their encouragement and support, but also for occasionally reminding me how lucky I am to be able to do this. Your reminders that I am loved, regardless of my title, mean the world to me. This page does not have enough space to tell you how grateful I am to have you in my life.

This thesis is dedicated to my grandmothers Grietje Wiggers-Supèr and Bertie de Hartog-Flinterman. I stand not only on the shoulders of giants [91], but have also been upheld by the strongest women I know.

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