

## Execution Report

**Title:** Reproducibility in Management Science

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**Full reference:** Fišar et al. “Reproducibility in Management Science” Working paper, December 6, 2023.

The structure and contents of this execution report provided by **cascad** for the certification are similar to those recommended by the [AEA Data Editor](#).

### 1. DATA DESCRIPTION

This paper uses collected data from 753 attempts to reproduce 500 articles published in *Management Science*, before and after the introduction of a new Data and Code Disclosure policy in 2019.

For a thorough description of the data, please refer to Section II.B of the paper.

### 2. CODE DESCRIPTION

The verification package contains the following files and subfolders:

*01\_readme.txt*  
*02\_analysis.do*  
*03\_figures.do*  
*data.dta*  
*other*  
*Qualtrics*

“02\_analysis.do” and “03\_figures.do” import “data.dta” and respectively generate all tables and figures in paper using Stata.

The “other” subfolder contains the original figures produced in Excel, while “Qualtrics” contains screenshots of the reproducibility report survey. Those subfolders were not used during the verification.

### 3. VERIFICATION STEPS

The verification package was received as a Zip file on December 7 and run as per readme using Stata 18 on a computer with 64GB RAM, intel® Core™ i9-9900K CPU @3.60-5.00GHz, Nvidia Geforce RTX 2060, and Windows 10 OS. We encountered no issues during the verification.

### 4. FINDINGS

As shown below, we reproduced all the Tables and Figures displayed in the article with perfect accuracy.

#### 4.1. TABLE 1: REVIEWER CHARACTERISTICS

	Share	2nd reviewer	Avg. Hours	Avg. Expertise Method	Avg. Expertise Topic
Professor	14%	21%	13.1	84.3	60.8
Associate Professor	26%	11%	8.3	83.2	61.5
Assistant Professor/Postdoc	40%	6%	8.4	84.1	58.7
PhD student	16%	1%	9.0	83.8	59.2
Other	4%	3%	6.1	82.8	52.7
N=	675				

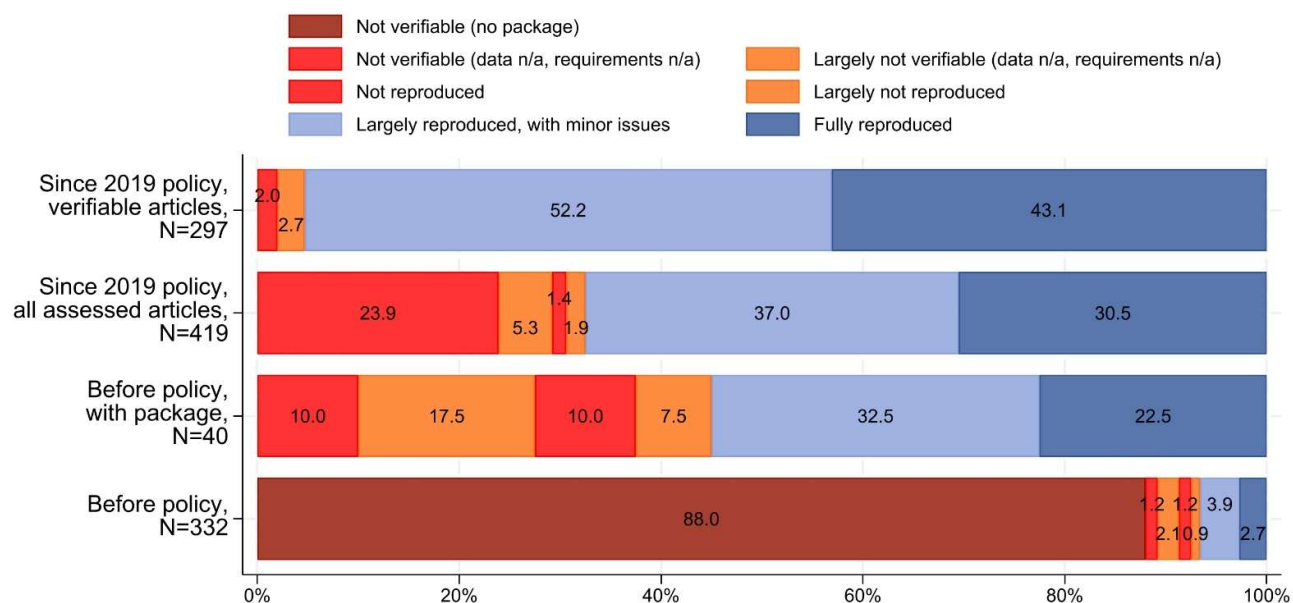
#### 4.2. TABLE 2: INITIAL AND FINAL SAMPLE OF ARTICLES AND REPORTS

	Before 2019	After 2019	Total
Total	334	447	781
Package available	42	447	489
Package and report(s)	40	419	459
1 report	16	149	165
2 reports	24	270	294

#### 4.3. TABLE 3: FIELDS OF ASSESSED ARTICLES AND REVIEWERS

Abbr.	Share of articles	Share of reviewers
FIN	27.4%	24.3%
BDE	18.4%	30.1%
ACC	12.5%	8.2%
OPM	9.2%	7.1%
MKG	5.7%	6.5%
RMA	4.7%	0.7%
INS	4.3%	4.0%
BST	3.3%	4.6%
HCM	3.3%	1.9%
BDA	3.1%	3.4%
ORG	3.1%	3.6%
ENI	2.3%	4.0%
OPT	1.4%	1.2%
SMS	1.4%	0.4%
N=	489	675

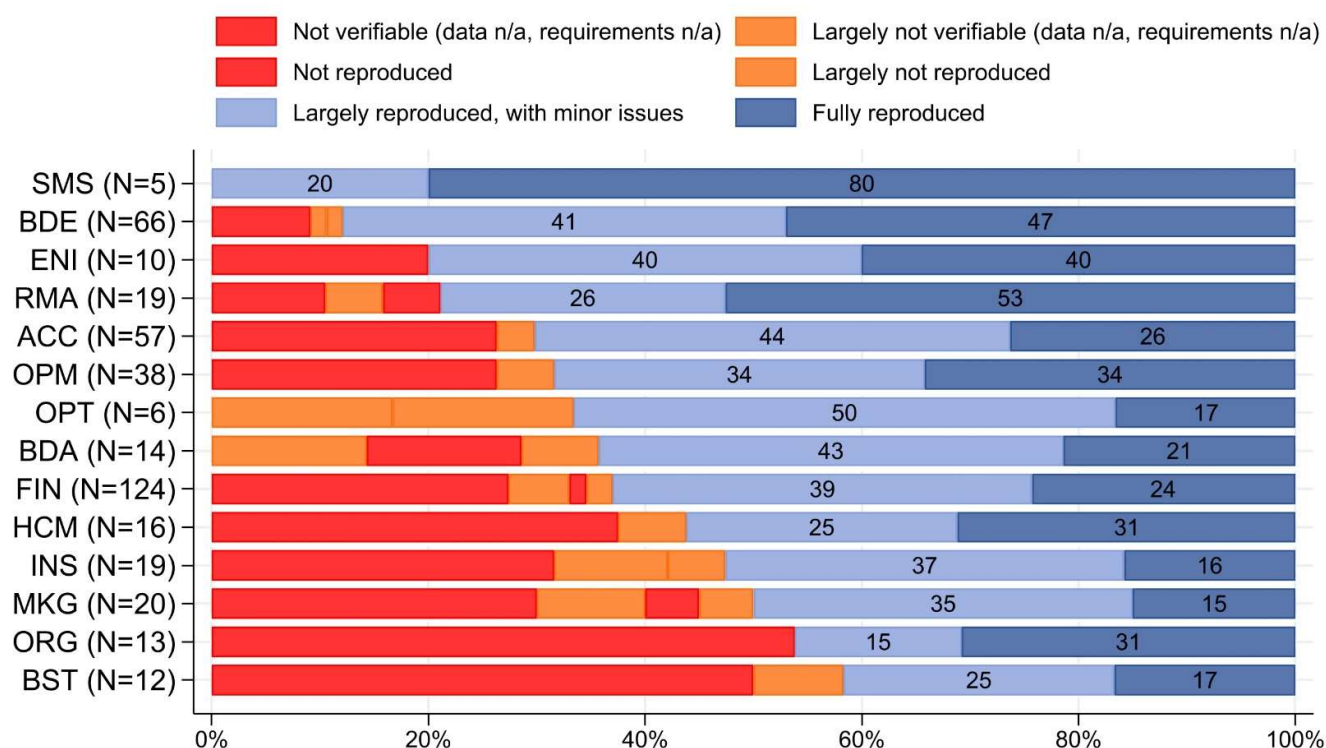
#### 4.4. FIGURE 1: OVERALL ARTICLE REPRODUCIBILITY ASSESSMENTS, BY POLICY



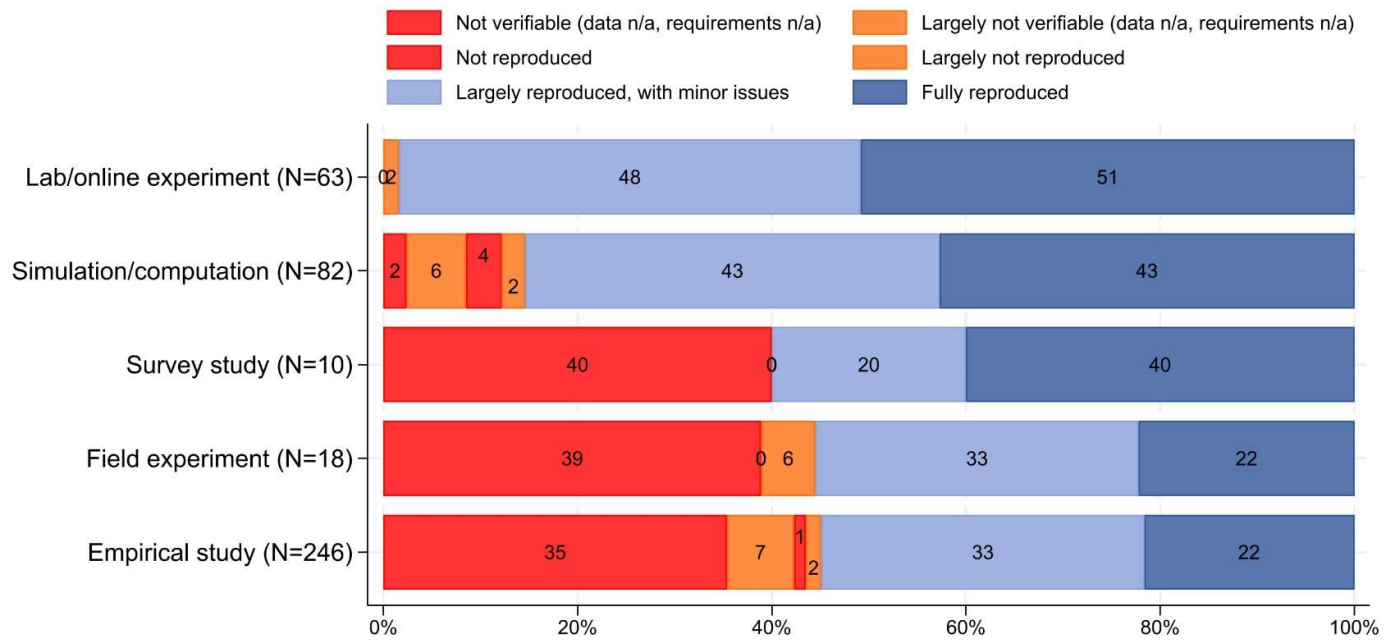
4.5. TABLE 4: REGRESSING REPRODUCIBILITY ON DISCLOSURE POLICY EXISTENCE

	No package				All with package				All verifiable			
	Coeff	Std. Err.	t	Pr > t	Coeff	Std. Err.	t	Pr > t	Coeff	Std. Err.	t	Pr > t
Constant	0.066	0.021	3.12	0.002	0.550	0.075	7.37	0	0.759	0.045	17.03	0
Disclosure policy	0.609	0.028	21.4	0	0.125	0.078	1.61	0.109	0.194	0.047	4.16	0
N=	751				459				326			
R <sup>2</sup>	0.379				0.006				0.051			

4.6. FIGURE 3: OVERALL REPRODUCIBILITY ASSESSMENTS BY JOURNAL DEPARTMENT



4.7. FIGURE 4: OVERALL REPRODUCIBILITY ASSESSMENTS BY ARTICLE TYPE/METHOD



4.8. TABLE 5: REGRESSING REPRODUCIBILITY ON JOURNAL DEPARTMENT AND ARTICLE TYPE

	Coeff	Std. Err.	t	Pr > t	Coeff	Std. Err.	t	Pr > t	Coeff	Std. Err.	t	Pr > t
_cons	0.629	0.041	15.27	0	0.600	0.138	4.34	0	0.630	0.146	4.31	0
SMS	0.371	0.209	1.77	0.077					0.034	0.207	0.16	0.869
BDE	0.250	0.070	3.57	0					0.019	0.087	0.21	0.831
ENI	0.171	0.151	1.13	0.258					0.215	0.143	1.51	0.133
RMA	0.160	0.113	1.42	0.157					-0.110	0.118	-0.93	0.354
ACC	0.073	0.073	0.99	0.322					0.128	0.070	1.82	0.069
OPM	0.055	0.085	0.65	0.517					-0.049	0.083	-0.59	0.553
OPT	0.038	0.192	0.2	0.845					-0.299	0.191	-1.56	0.119
BDA	0.014	0.129	0.11	0.915					-0.323	0.137	-2.36	0.019
HCM	-0.067	0.122	-0.55	0.585					-0.059	0.115	-0.51	0.608
INS	-0.103	0.113	-0.91	0.364					-0.073	0.108	-0.68	0.495
MKG	-0.129	0.111	-1.17	0.244					-0.118	0.106	-1.11	0.268
ORG	-0.167	0.134	-1.25	0.211					-0.120	0.127	-0.95	0.345
BST	-0.212	0.139	-1.53	0.126					-0.188	0.134	-1.4	0.163
Lab/Online					0.384	0.149	2.58	0.01	0.336	0.153	2.2	0.028
Simul./Comput.					0.254	0.146	1.73	0.084	0.336	0.155	2.17	0.031
Field exp.					-0.044	0.172	-0.26	0.797	-0.009	0.173	-0.05	0.957
Emp. Study					-0.051	0.141	-0.36	0.716	-0.087	0.143	-0.61	0.543
N=		419				419				419		
R <sup>2</sup>		0.072				0.140				0.180		

4.9. TABLE B.1: SOFTWARE USED IN ARTICLES WITH AND WITHOUT REPORT

	Has report	No report
Stata	60.1%	43.3%
R	19.2%	23.3%
Matlab	17.9%	26.7%
SAS	12.9%	13.3%
Python	10.7%	13.3%
Mathematica	1.7%	6.7%
SPSS	1.3%	0.0%
Other	5.7%	13.3%
N=	459	30

4.10. TABLE B.2: REASONS FOR NON-REPRODUCIBILITY FOR ARTICLES WITH REPLICATION PACKAGE, BY POLICY

	Before 2019	Since 2019
No access to dataset	61.1%	88.2%
Issues with software/hardware requirements	5.6%	2.9%
Code or parts of code/functions missing	55.6%	12.5%
Insufficient documentation, missing information	11.1%	7.4%
Unresolvable errors when executing code	11.1%	5.1%
Reproduction yields (partly) different results.	11.1%	4.4%
N=	18	136

4.11. TABLE B.3: DISTRIBUTION OF ARTICLE TYPES/METHODS FOR EACH JOURNAL DEPARTMENT, SINCE 2019 POLICY

tment1	Lab/online	Theory/Sim.	Survey	Field exp.	Empirical
SMS	0	100	0	0	0%
BDE	70	3	5	8	15%
ENI	10	0	0	0	90%
RMA	0	84	0	0	16%
ACC	7	0	2	0	91%
OPM	11	32	5	11	42%
OPT	0	100	0	0	0%
BDA	0	100	0	0	0%
FIN	5	15	1	1	78%
HCM	0	19	0	0	81%
INS	0	11	5	11	74%
MKG	10	5	0	15	70%
ORG	0	8	8	0	85%
BST	0	8	8	25	58%
Total	15	20	2	4	59%

4.12. TABLE C.1: ROBUSTNESS CHECKS ON OVERALL ARTICLE REPRODUCIBILITY ASSESSMENTS

	Since 2019 policy, verifiable articles			Since 2019 policy, all assessed articles			Before 2019 policy, all assessed articles		
	lower	rand.	upper	lower	rand.	upper	lower	rand.	upper
Not verifiable				29.4%	26.7%	23.9%	15.0%	12.5%	10.0%
Largely not verifiable				6.4%	6.0%	5.3%	17.5%	17.5%	17.5%
Not reproduced	4.5%	3.0%	2.0%	2.9%	2.0%	1.4%	10.0%	10.0%	10.0%
Largely not reproduced	4.1%	3.2%	2.7%	2.6%	2.0%	1.9%	10.0%	8.8%	7.5%
Largely reproduced	68.4%	60.1%	52.2%	43.9%	40.5%	37.0%	37.5%	35.0%	32.5%
Fully reproduced	23.0%	33.7%	43.1%	14.8%	22.7%	30.5%	10.0%	16.2%	22.5%
Fully or largely reproduced	91.4%	93.8%	95.3%	58.7%	63.2%	67.5%	47.5%	51.2%	55.0%



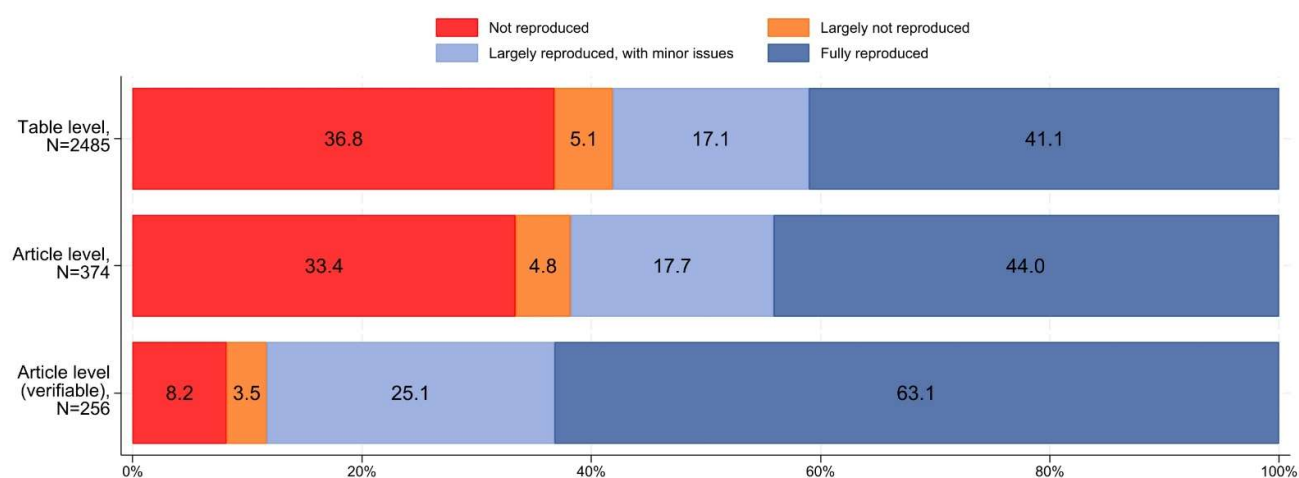
4.13. TABLE C.2: REGRESSING REPRODUCIBILITY ON DISCLOSURE POLICY EXISTENCE, REPORT LEVEL

	No package				All with package				All verifiable			
	Coeff	Std. Err.	t	Pr >  t	Coeff	Std. Err.	t	Pr >  t	Coeff	Std. Err.	t	Pr >  t
Constant	0.098	0.020	4.83	0	0.547	0.077	7.06	0	0.778	0.069	11.28	0
Policy	0.526	0.031	17.08	0	0.077	0.081	0.96	0.34	0.159	0.070	2.26	0.024
N=	1051				753				504			
R <sup>2</sup>	0.251				0.002				0.029			

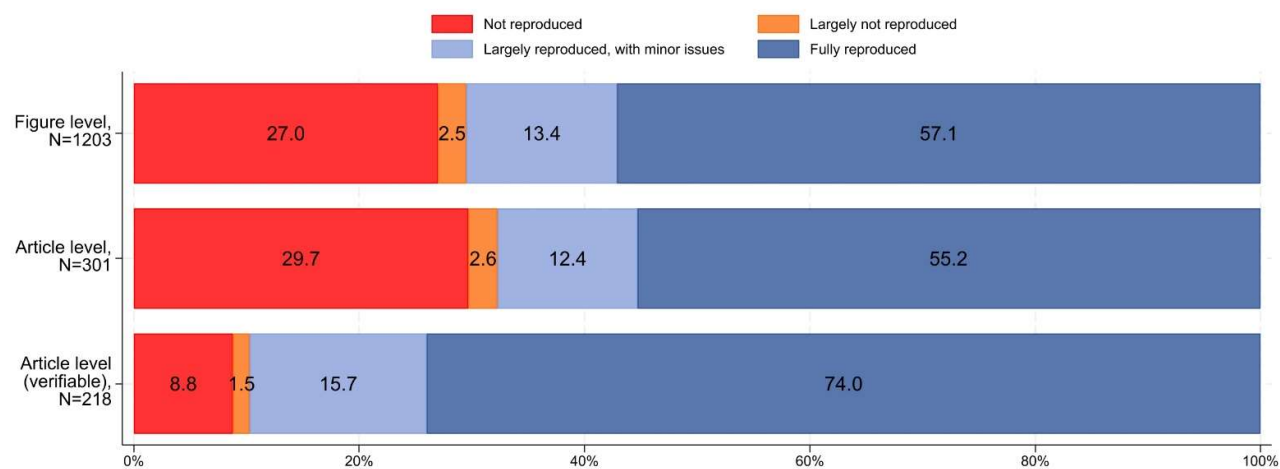
4.14. TABLE C.3: SHARE OF TABLES, FIGURES, AND OTHER RESULTS ASSESSED AS AT LEAST LARGELY REPRODUCIBLE, BY OVERALL REPRODUCIBILITY ASSESSMENT, SINCE 2019 POLICY

	Tables	Figures	Other results
Fully reproduced	99.1%	99.7%	92.3%
Largely reproduced, with minor issues	86.6%	84.9%	63.4%
Largely not reproduced, with major issues	12.0%	30.5%	0.0%
Not reproduced	2.7%	7.5%	23.7%
N=	374	301	145

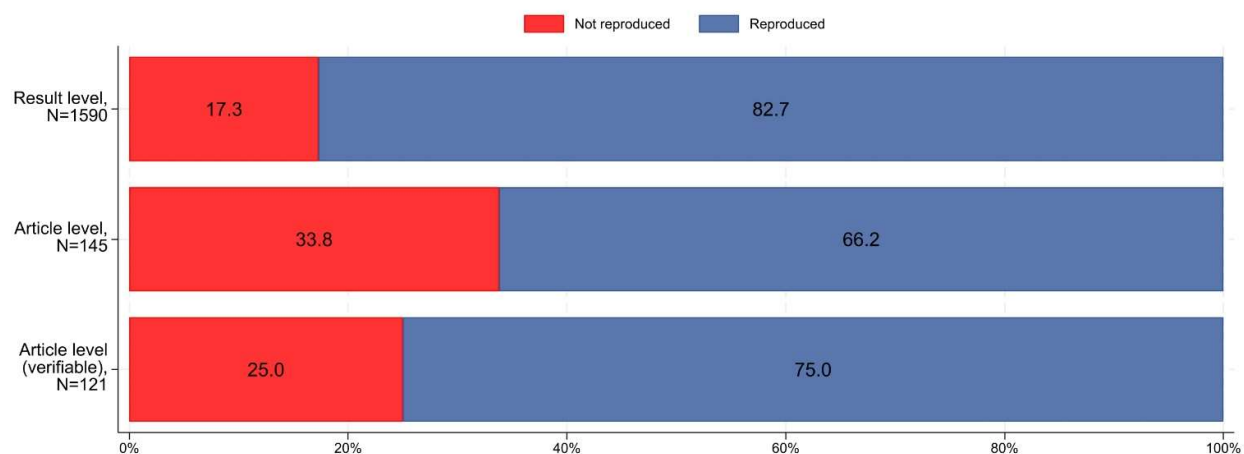
4.15. FIGURE C.1: REPRODUCIBILITY ASSESSMENTS OF TABLES, SINCE 2019 POLICY



#### 4.16. FIGURE C.2: REPRODUCIBILITY ASSESSMENTS OF FIGURES, SINCE 2019 POLICY



#### 4.17. FIGURE C.3: REPRODUCIBILITY ASSESSMENTS OF OTHER RESULTS, SINCE 2019 POLICY



#### 4.18. TABLE D.1: REVIEWER CONSISTENCY

	Not	Largely not	Largely	Fully
Not reproduced	70	16	13	2
Largely not reproduced, with major issues		8	20	5
Largely reproduced, with minor issues			65	64
Fully reproduced				31