Title: Information quality with Lin et al. (2023) score appendix for "Declining information quality under new platform governance"
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Note: The material contained herein is supplementary to the article named in the title and published in the Harvard Kennedy School (HKS) Misinformation Review.

Appendix A: Information quality with Lin et al. (2023) score

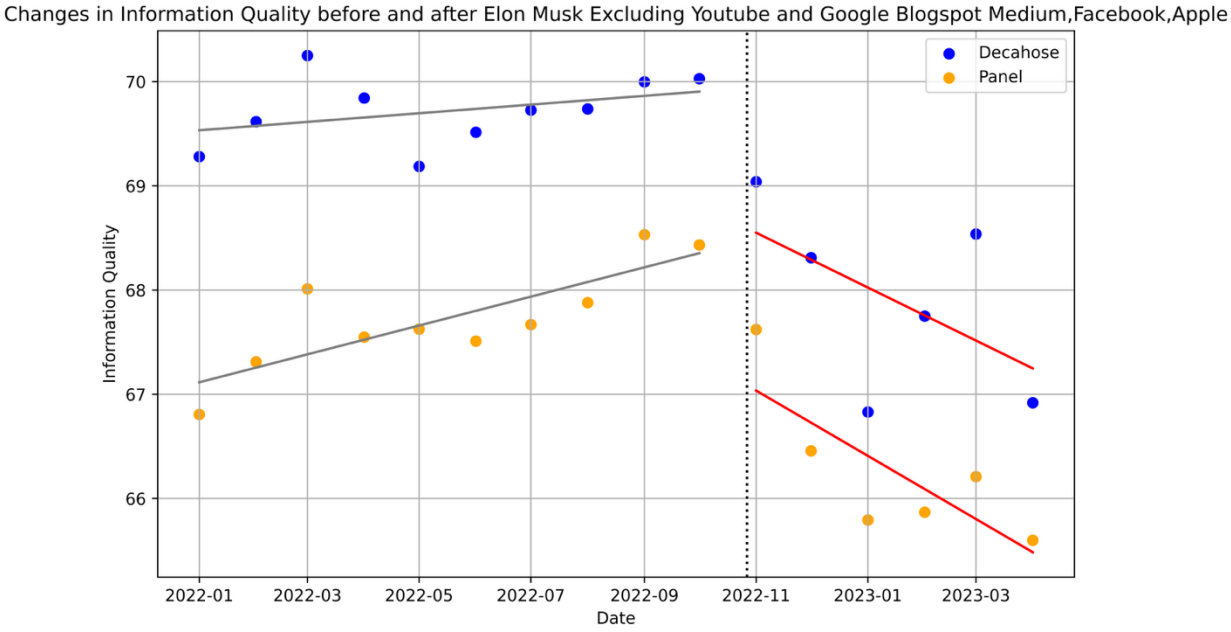

Figure A1. Information quality on Twitter/X following Elon Musk's acquisition obtained by Lin et al. (2023). *Information quality (y-axis; ranging from 0 to 100) is measured as the average of Lin et al. (2023) domain quality scores for domains shared each month, from January 2022 to April 2023 (x-axis).*

To test the robustness of our results using an alternative operationalization of information quality, we utilize the domain quality score developed by Lin et al. (2023). This score assesses information quality across domains by aggregating credibility evaluations from multiple sources, including fact-checking organizations, news outlets, and academic research. Lin et al. (2023) employed principal component analysis to generate a unified score for each of the 11,520 domains evaluated. The resulting principal component score ranges from 0 to 1, where higher values indicate greater credibility. For instance, high-credibility domains, such as nytimes.com (0.86), nasa.gov (0.96), and cdc.gov (0.96), receive scores close to 1, reflecting strong adherence to standards of accuracy and transparency. In contrast, lower-credibility domains, like infowars.com (0.05) and thegatewaypundit.com (0.10), are assigned scores near 0, indicating minimal adherence to these standards.

Figure A1 illustrates a clear shift in trend lines following the intervention point, marked by Elon Musk's acquisition of Twitter. In the period before the acquisition, both the Twitter panel and Decahose datasets display non-negative trends, indicating either stable or slightly increasing information quality over time. However, after the acquisition (marked by the red dashed line), the trend lines turn negative, signifying a decline in information quality scores in both datasets.

The significance of this downward shift is corroborated by our interrupted time series (ITS) analysis, with detailed statistical results provided in Tables A1 and A2. These tables confirm a statistically significant drop in information quality immediately following the intervention, with an effect size of 1.478 for the Twitter panel and 1.40 for the Decahose dataset.

Table A1. *Interrupted time series (ITS) coefficients for Twitter panel with Lin et al. (2023) domain quality scores.*

Variable	Coef	*SE*	$p < \|t\|$	[0.25	0.975]
Intercept	69.245***	0.252	0.000	68.697	69.793
Trend Before Intervention (Musk takeover)	0.1923**	0.047	0.002	0.09	0.295
Intervention (Musk takeover)	-1.478**	0.426	0.005	-2.406	-0.55
Change in Trend After Intervention (Musk takeover)	-0.3205*	0.113	0.015	-0.566	-0.075

*Note: This table summarizes the results of the interrupted time series (ITS) regression model assessing changes in information quality scores for Twitter panel before and after the acquisition. The coefficients (coef) reflect the estimated effects for each variable: the baseline level (Intercept), the pre-intervention trend, the immediate effect of the intervention (acquisition), and the post-intervention trend. Significance levels are indicated by asterisks (*p < .05, **p < .01, ***p < .001). Standard errors (SE) and 95% confidence intervals [0.025, 0.975] are provided for each estimate.*

Table A2. *Interrupted time series (ITS) coefficients for Decahose with Lin et al. (2023) domain quality scores.*

Variable	Coef	*SE*	$p < \|t\|$	0.025]	0.975]
Intercept	69.532***	0.327	0.000	68.820	70.244
Trend Before Intervention (Musk takeover)	0.0414	0.061	0.512	-0.092	0.175
Intervention (Musk takeover)	-1.4053*	0.553	0.026	-2.610	-0.2
Change in Trend After Intervention (Musk takeover)	-0.2985	0.146	0.064	-0.617	0.02

*Note: This table summarizes the results of the interrupted time series (ITS) regression model assessing changes in information quality scores for Twitter panel before and after the acquisition. The coefficients (coef) reflect the estimated effects for each variable: the baseline level (Intercept), the pre-intervention trend, the immediate effect of the intervention (acquisition), and the post-intervention trend. Significance levels are indicated by asterisks (*p < .05, **p < .01, ***p < .001). Standard errors (SE) and 95% confidence intervals [0.025, 0.975] are provided for each estimate.*