Experimental calibration of MMM: evidence from 18 case studies

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First published: January 31, 2023

We conducted 18 case studies with app advertisers in North America and Europe over the last two years comparing return-on-ad-spend (ROAS) estimates obtained via a marketing mix model (MMM) with those obtained via ad experiments. This set of case studies allows for a tentative quantification of the need for experimental calibration to keep MMM-based ROAS estimates precise. Figure 1 displays the absolute correction of the MMM suggested by the respective geo experiment for the 18 case studies.[1] The figure shows that the disagreement between experiment- and MMM-based ROAS estimates can be large, substantiating a need for experimental calibration of MMMs in digital ad measurement.

Across countries, the calibration-induced correction ranges from 1% (in France based on only one case study) to 19% (in Germany, based on two studies), with a mode of 15% for nine studies in the U.S. and for three studies in Canada. There is some suggestive evidence that, the more targeted the ad strategy in question, the greater is the need for calibration: All of the case studies with higher differences (and calibration adjustments) are characterized by more narrow targeting, and we find the highest overall calibration adjustment of 56% for custom audience ads in the US. This finding suggests that especially smaller brands that address more niche market segments may want to make sure to experimentally calibrate their MMM.

The results of our case studies, with an average pre- and post-calibration difference in estimated ROAS of 15%, may make for a conservative assessment of the need for calibration. Other reports have found an average calibration correction of 25% across a multitude of verticals, including FMCG, home appliances, telecommunications, real estate and automotive, and across a multitude of regions, including APAC, the US, Brazil, Russia, and South Africa.

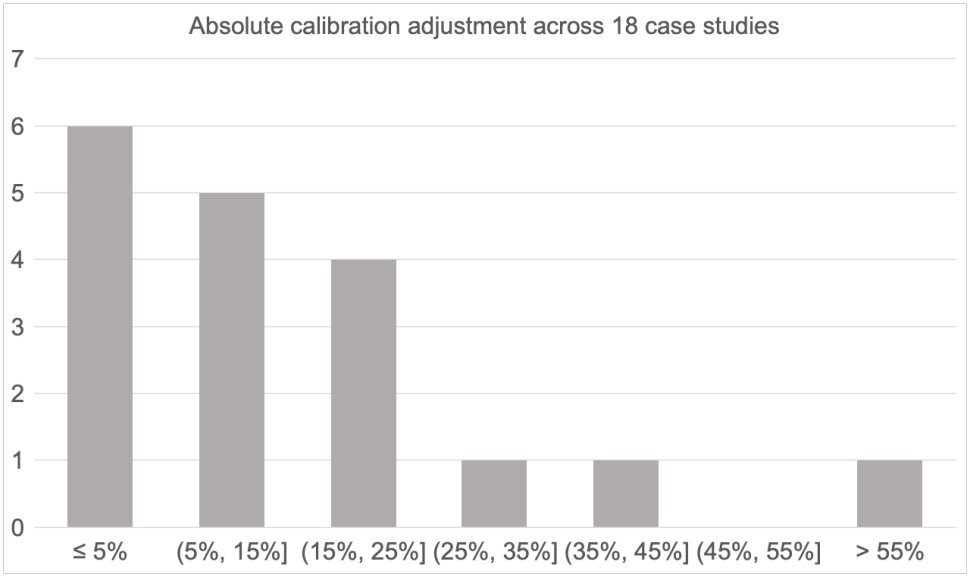

Figure 1: Identified correction of MMM-based ROAS estimates through ad experiments for 18 studies conducted with app advertisers in North America and Europe: The horizontal axis shows the absolute calibration correction, the vertical axis shows the number of case studies falling in the respective range.

[1] The calibration methodology we used is detailed here.