

Trustworthy A/B Patterns: Rounded/Square Corners Pattern

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This is a summary of the round/square corners pattern, part of the Trustworthy A/B Patterns project (<https://bit.ly/trustworthyABPatterns>).

A study by Biswas, Abell, and Chacko published in the *Journal of Consumer Research* (2023) reported that in an A/B test simply rounding the corners of square buttons increased the online click-through rate by 55% (p-value 0.037), a striking finding with potentially wide-ranging implications for a digital industry that is seeking to enhance consumer engagement.

Given our experience with similar changes, we felt this result was implausible, and this was our first pattern that we replicated as part of the Trustworthy A/B Patterns project (Kohavi, Linowski and Vermeer June 5, 2024). The first three replications are detailed in Kohavi et al. (2026) and reviewed briefly below, followed by our fourth replication.

Our first three high-powered A/B tests each had over two thousand times as many users than the original study. Obs and Obs-BYGG are two large websites that are part of Coop, Norway's 15th largest company, and SeaWorld® Orlando is the website for the US theme park. All three experiments yielded effect size estimates that were approximately two orders of magnitude smaller than initially reported, with 95% confidence intervals that include zero, that is, not statistically significant at the 0.05 level. Table 1 shows a summary of the results. Using the Small Telescopes approach (Simonsohn 2015), we showed that the original study's design was too small to be informative: it was highly underpowered.

Table 1: Summary of results for the original BAC studies and for our three initial replications

Study	N control	N treatment	CTR Control	CTR Treatment	Lift (T-C)/C	p-value
BAC (Study 2)	445	474	7.19%	11.18%	55.49%	0.037
BAC (Study 3)	50	54	52.00%	75.93%	46.01%	0.011
BAC (Study D)	32	33	21.88%	45.45%	107.79%	0.045
SeaWorld® Orlando	1,448,041	1,448,066	47.13%	47.21%	0.16%	0.20
Obs-BYGG	1,126,132	1,124,100	5.43%	5.45%	0.29%	0.60
Obs	977,499	976,653	10.07%	10.14%	0.73%	0.09

Our fourth replication was conducted at METRO Russia, a leading wholesale operator offering food and non-food products through 91 cash & carry stores across 51 regions and employing approximately 10,000 staff.

Figure 1 shows a product (Coca-Cola bottle) with the (almost) square add-to-cart button (in Russian) in Control, and a rounded button for the Treatment.

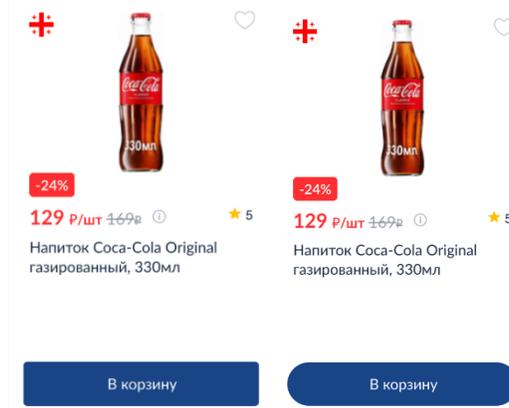


Figure 1: Metro Russia Control (left) and Treatment (right)

The experiment was pre-registered with OSF, the Open Science Framework (Kohavi 2025, Aug 4), and the runtime was pre-declared as 16 weeks. It ran from Sept 4, 2025, to December 25, 2025, exactly 16 weeks. The OEC (Overall Evaluation Criterion) was pre-declared to be add-to-cart per user, as a Boolean. With over 7.4 million users, it was the largest experiment for this pattern. The conversion rate for add-to-cart per (Boolean) per user was 4.4%, providing 80% power to detect a 1.0% relative lift. For add-to-cart per user as a count (integer), the MDE for 80% power was 2.7%, and capping the add-to-cart at 10 improves the MDE to 1.2%.

The users were split as 3,699,177 for Control and 3,701,231 for the Treatment, and an SRM test passes with p-value 0.45.

Table 2 shows the estimates for the pre-declared Boolean metric and two variants for count and capped count. All estimates are below the respective MDEs, and all p-values are far from 0.05.

Table 2: Metro Russia estimate lift and p-value for

Metric	Lift	p-value
Add-to-cart per user (Boolean)	-0.07%	0.83
Add-to-cart per user (count)	0.83%	0.41
Add-to-cart per user (count capped at 10)	0.35%	0.41

The replication provides additional evidence that the original paper, which claimed 55% improvement, was highly underpowered and therefore susceptible to the winner's curse and substantial effect-size exaggeration.

Acknowledgment

Andrei Andreev at Metro Russia ran the experiment and addressed questions and concerns. Our co-authors on the *Power Analysis is Essential* paper (Kohavi, Linowski, et al. 2026) include Andrew Gelman, Guido Imbens, Joachim Furuseth, Ravikiran Rajagopal, and Fabrice Boisseranc.

References

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