kenso

KENSO RESEARCH · METHODOLOGY

Do sales hiring sprees end in cuts?

The data, the methods, every number and every limitation behind the study.

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ABOUT THE DATA

This study uses Kenso internal data: the company, people and web records Kenso uses for sales and outreach, reused by Cristian Frunze for this study.

Aggregates only. Any group smaller than 50 people is suppressed, and no individual is named.

Figures 1 to 4 are the study page's charts, drawn from the same numbers. The methodology after them keeps the full tables.

SUMMARY

Do sales hiring sprees end in cuts?

Mostly not. 28.7% of software and IT companies that grew sales 50% or more in a year cut that team by a fifth within 18 months. Similar steady growers cut at least as often.

51.8%

of spree companies still had a sales team at least 10% larger 18 months after the spree year. 29.2% had shrunk by 10% or more.

-2.5 points

gap in the 18-month cut rate: 29.1% of matched sprees against 31.6% of steady growers from the same quarter, industry and age band (interval -4.4 to -0.7).

0.60

people added to the sales team over 18 months for every person on it at the end of the spree, against 0.42 at steady growers.

37.0%

of sprees that ended in 2022 were followed by a cut, against 25.6% of those ending 2017 to 2019. The market mattered more than the spree.

Data and method

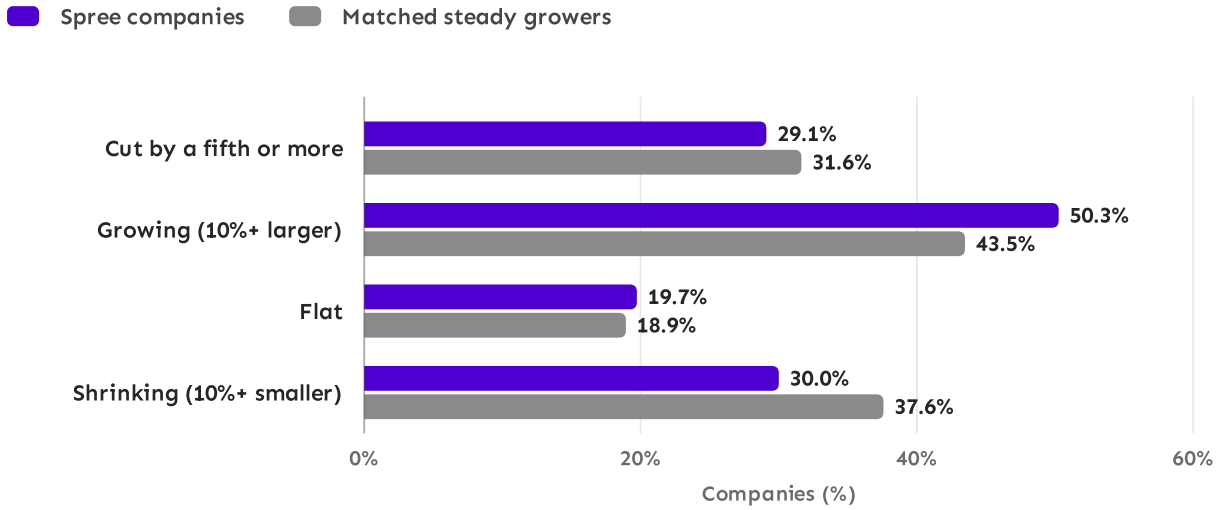
Data	Kenso internal data: the public work histories and company records Kenso uses for sales and outreach, reused by Cristian Frunze for this study, plus SEC Form D filings for US raises. Six countries: the US, the UK, Canada, Australia, Ireland and New Zealand.
Sample	4,514 sales hiring sprees at software and IT companies (sales team up 50% or more in a year, from at least 5 to at least 10 people); 3,446 matched to 4,356 steady growers.
Date range	Spree years ending 2017 Q1 to 2024 Q3, each followed for 18 months, to 2026 Q1 at the latest.
Method	Pre-registered matched comparison: each spree against up to three steady growers (sales up 10% to 30%) from the same quarter, industry and age band, with similar size, sales team and prior growth. 95% intervals from 1,000 company bootstrap draws. Headline numbers recomputed by an independent analysis.
Excluded	• Sprees that start from 0 to 4 salespeople (2,305 in software and IT, described apart) • Customer success staff and interns, who are not counted as sales • Companies with no company record, which cannot be placed in an industry
Privacy	Aggregates only. Any group smaller than 50 people is suppressed, and no individual is named.

FIGURES

The study's charts

FIGURE 1

Spree companies cut no more often than steady growers

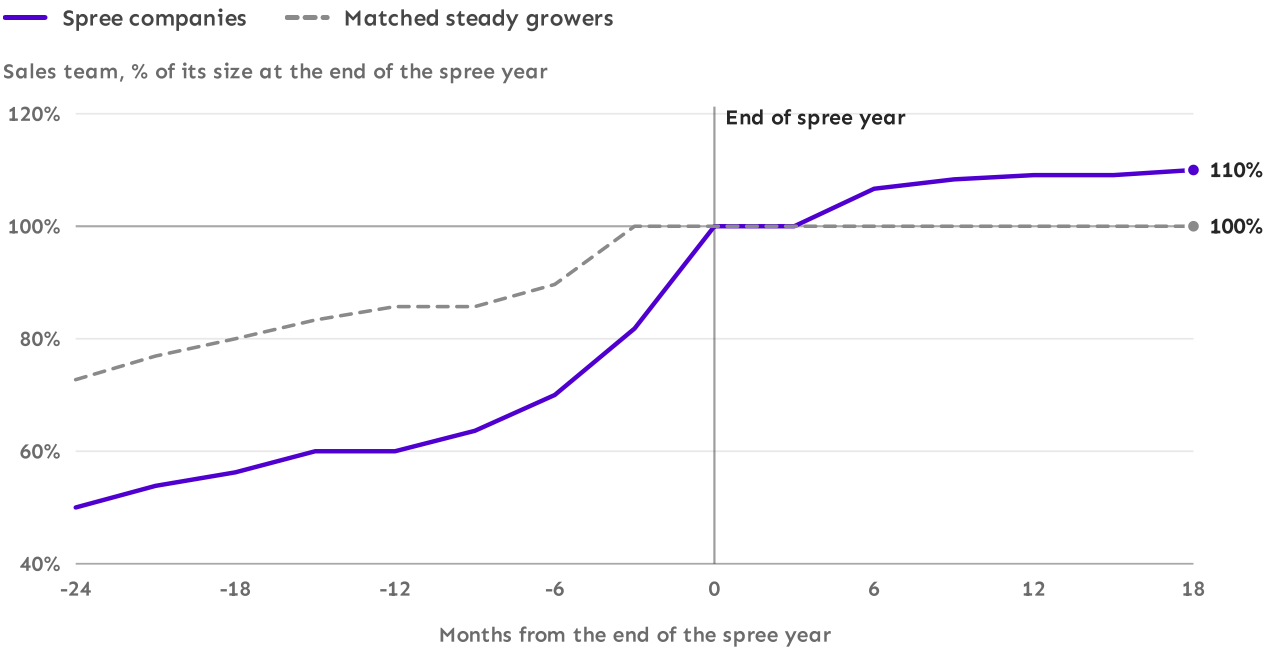


Sales team 18 months after the end of the spree year, for 3,446 spree companies and their matched steady growers (sales up 10% to 30% in the same year). A cut is a team 20% or more below its spree-end size at any quarter end in those 18 months.

Source: Kenso internal data (company and career records Kenso uses for sales and outreach), analysed by Cristian Frunze.

FIGURE 2

The median spree team kept growing after the spree

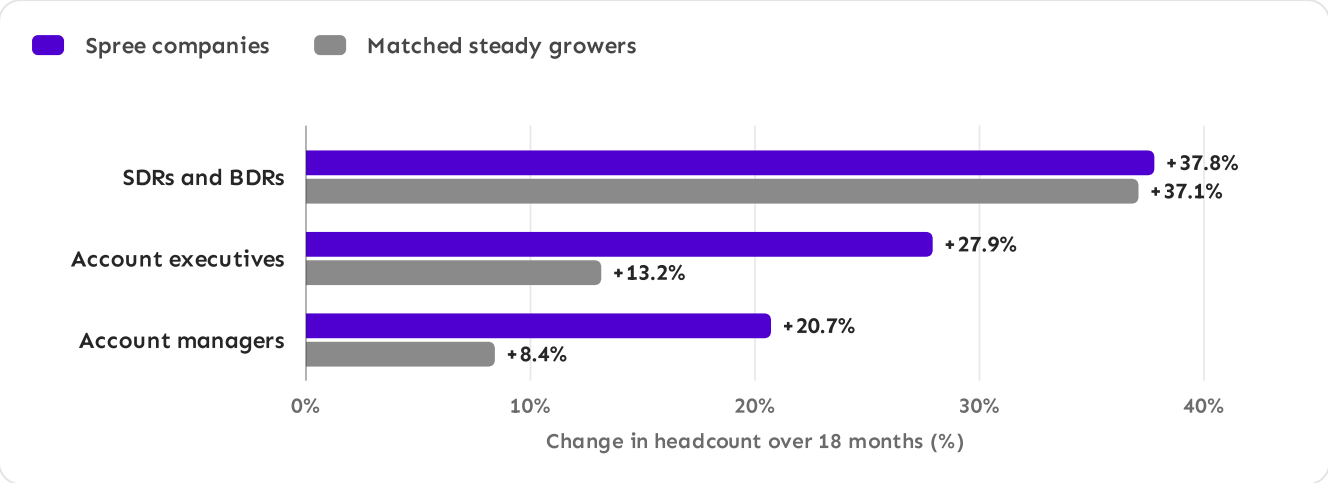


Median sales team as a share of its size at the end of the spree year (month 0), for matched spree companies and their steady growers. The spree year runs from month -12 to month 0.

Source: Kenso internal data (company and career records Kenso uses for sales and outreach), analysed by Cristian Frunze.

FIGURE 3

Spree companies kept adding AEs and account managers

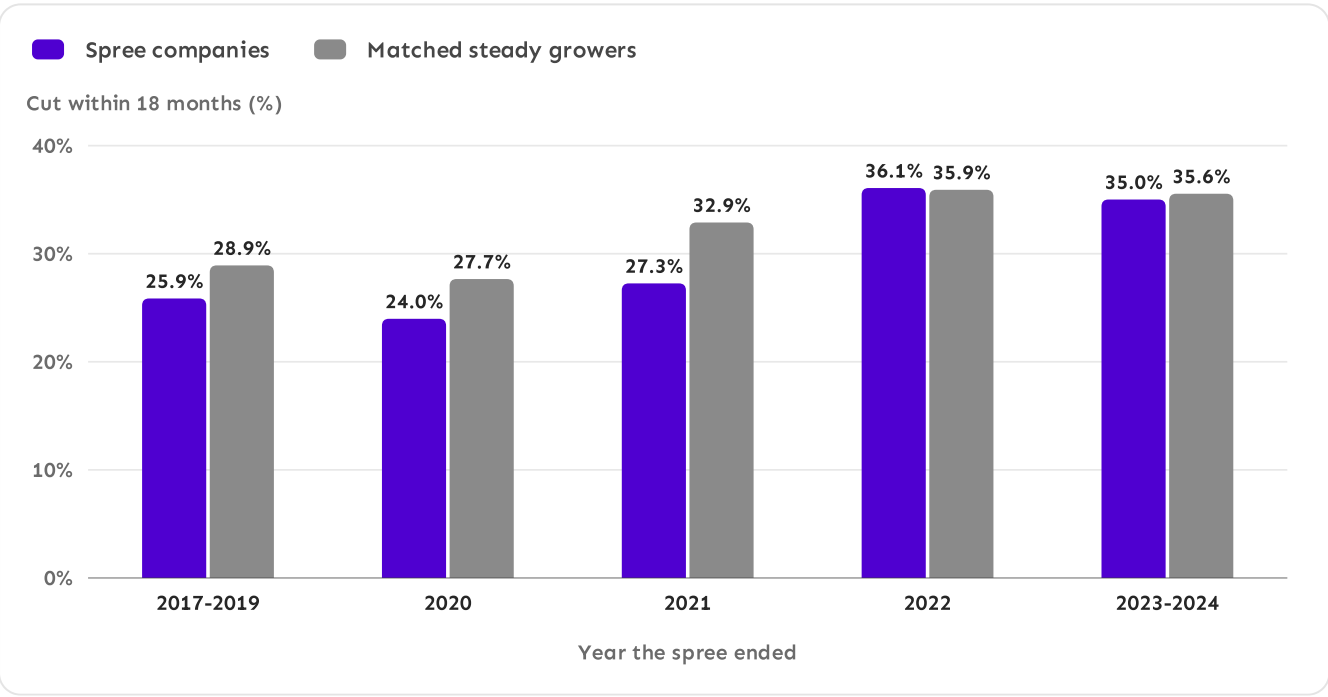


Change in headcount in each sales role from the end of the spree year to 18 months later, pooled across 3,446 matched spree companies and, weighted, across their steady growers.

Source: Kenso internal data (company and career records Kenso uses for sales and outreach), analysed by Cristian Frunze.

FIGURE 4

Sprees ending in 2022 cut most, and so did steady growers



Share of matched spree companies, and of their steady growers in the same quarters, whose sales team fell 20% or more below its spree-end size within 18 months, by the year the spree ended.

Source: Kenso internal data (company and career records Kenso uses for sales and outreach), analysed by Cristian Frunze.

FULL METHODOLOGY

The data, the methods and every number

The hypothesis and plan were pre-registered on 2026-10-19, before any data was read.

1. Question and short answer

Question. Companies that grew sales headcount 50% or more in a year: 18 months later, were they still growing, flat, or cutting sales? How does that compare with similar companies that grew sales steadily?

Short answer. In software and IT companies, sales hiring sprees were not followed by cuts more often than steady growth. Of 4,514 sprees, 28.7% were followed within 18 months by a sales cut of 20% or more, and at 18 months 51.8% were still growing, 19.0% flat and 29.2% shrinking. In a matched comparison with companies of the same quarter, industry, age, size, starting sales team and prior growth whose sales team grew 10-30%, the cut rates were 29.1% and 31.6% (gap -2.5 points, 95% interval -4.4 to -0.7), and sprees were more often still growing (50.3% against 43.5%). Spree companies had also grown faster than their matched steady growers two to three years earlier, so the comparison is not cleanly identified: the results describe what followed sprees, linked with them, and do not show that sprees cause growth or protect against cuts.

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2. Data

Kenso internal data. Kenso's dataset of public professional profiles, work histories and company records. It holds people whose current country is the US, the UK, Canada, Australia, Ireland or New Zealand; staff elsewhere are missing, so every headcount in this study means staff in these six countries. Profiles were last refreshed between 2025-11 and 2026-04.

Headcount history. The study reads Kenso's shared headcount history extract (built for the Kenso Research study *Did AI kill the SDR role?*, build of 2026-10-17), read-only. It rebuilds headcount from the start and end dates of every role: a person counts at a company at a quarter end when one of their roles there covers that date (current roles run to the 2026-04-30 snapshot; past roles to the end of their end month). Quarter ends run from 2015 Q1 to 2026 Q1, the last complete quarter. Titles are labelled by function and level with the shared sales title taxonomy of the Kenso Research study *Who are GTM engineers, and where do they come from?* plus a customer-support rule. The function-level headcount counts each person once per company, quarter end, function and level; total headcount counts distinct people.

Study extract: every company id with at least 5 salespeople at some quarter end from 2016 Q1 to 2023 Q3, the possible starts of a spree year: 206,417 companies and 9,288,765 company-quarter rows (dense, 2015 Q1 to 2026 Q1; a quarter with no row counts 0), from 69,761,498 sales-label rows of the function-level headcount. 177,840 of the companies have a company record (industry, founded year, HQ country); the 28,577 without one cannot be placed in an industry and are left out of every analysis. 37,792 records have no founded year.

Funding. SEC Form D filings, the notices US companies file after selling securities in a private raise, from Kenso's shared funding-events extract (built for the Kenso Research study *When should you hire your first salesperson?*, build of 2026-10-16), matched to company records by name and state: 13,895 Form D events for 3,990 panel companies. Form D covers US issuers only, and many small raises are not filed, so "no recorded raise" does not mean "never raised". The company record's own funding fields date only the last round and are not used.

Person-level spells (exploratory analysis E2 only): the 555,053,752 role spells behind the headcount history, read on Kenso's servers; only aggregates leave them.

3. Definitions

- **Salespeople (S):** people whose title is labelled SDR/BDR, account executive, account management, general sales (including sales managers, directors and VPs), partnerships and business development, sales engineering, revenue operations, sales enablement, GTM engineering or other GTM roles, at any level except intern. This is the sales group of the Kenso Research studies *Who gets cut first in a B2B layoff? Recruiters, then SDRs* and *Sales and marketing draw level with engineering at about 50 people*. Customer success is not sales. A person with titles in two of these labels counts in both, as in the function-level headcount.
- **Total headcount (N):** distinct people at the company.
- **Spree condition** at a quarter end q (from 2016 Q1): S(q) >= 10 and S(q) >= 1.5 x S(q - 4), tested in whole numbers as 2S(q) >= 3S(q - 4).
- **Spree:** a company's first quarter end t0 with the spree condition, with t0 from 2017 Q1 to 2024 Q3 and no spree condition at any earlier quarter end from 2016 Q1. The spree year runs from t0 - 4 to t0 (quarters). Spree years therefore start in 2016 Q1 or later and end by 2024 Q3, so that the year before each spree is observed (back to 2015) and the full 18 months after each spree end by 2026 Q1. One spree per company. The main sample needs S(t0 - 4) >= 5.
- **Steady grower** at quarter end t: S(t - 4) >= 5, S(t) between 1.10 and 1.30 times S(t - 4) (whole-number form), and no spree condition at any quarter end from 2016 Q1 to t. A company can be a steady grower at several quarters and can have its own spree later.
- **Outcomes,** at 2, 4 and 6 quarters after t0 (6, 12 and 18 months), the same for sprees and steady growers:
- *cut by k:* S(t0 + j) <= 0.8 x S(t0) at some j from 1 to k (whole-number form 5S(t0 + j) <= 4S(t0));
- *18-month status:* growing if S(t0 + 6) >= 1.10 x S(t0), shrinking if S(t0 + 6) <= 0.90 x S(t0), flat otherwise;
- *sales kept:* S(t0 + k) / S(t0); *total headcount ratio:* N(t0 + k) / N(t0);
- *log growth:* ln(1 + S(t0 + k)) - ln(1 + S(t0)), and the same for N.

4. Sample

The headline population is software and IT: the 18 industry labels audited by the SDR study, as in the layoffs study, matched within three cells (product software, IT services, internet platforms). The secondary population is every company with a record, in the seven industry groups of the layoffs study (used unchanged) with software and IT split as above. Age at t0 is the calendar year of t0 minus the founded year.

Population	Step	Companies
all with record	panel companies	177,840
all with record	companies meeting the spree condition at some quarter end 2016 Q1-2026 Q1	46,717
all with record	first spree condition in 2016 (before the window; no spree)	7,592
all with record	first spree condition after 2024 Q3 (no full 18 months; no spree)	3,321
all with record	sprees: first spree condition 2017 Q1-2024 Q3	35,804
all with record	sprees from 0-4 salespeople (raw only)	7,979
all with record	sprees from 5+ salespeople (main sample)	27,825
software it	panel companies	22,230
software it	companies meeting the spree condition at some quarter end 2016 Q1-2026 Q1	8,798
software it	first spree condition in 2016 (before the window; no spree)	1,439
software it	first spree condition after 2024 Q3 (no full 18 months; no spree)	540

Population	Step	Companies
software it	sprees: first spree condition 2017 Q1-2024 Q3	6,819
software it	sprees from 0-4 salespeople (raw only)	2,305
software it	sprees from 5+ salespeople (main sample)	4,514
all panel	panel companies	206,417
all panel	companies meeting the spree condition at some quarter end 2016 Q1-2026 Q1	53,125
all panel	first spree condition in 2016 (before the window; no spree)	8,723
all panel	first spree condition after 2024 Q3 (no full 18 months; no spree)	3,709
all panel	sprees: first spree condition 2017 Q1-2024 Q3	40,693
all panel	sprees from 0-4 salespeople (raw only)	9,198
all panel	sprees from 5+ salespeople (main sample)	31,495

Each quarter from 2017 Q1 to 2024 Q3 held between 1,257 and 1,590 software and IT steady growers (14,425 to 19,952 in all industries).

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5. Methods

5.1 Raw outcomes

For all main-sample sprees: the share cut by 6, 12 and 18 months, the 18-month status split, and the median sales kept and total-headcount ratio. 95% intervals come from 1,000 bootstrap resamples of companies (percentile intervals).

5.2 Matched comparison

Fast growth tends to be followed by slower growth anyway, so the raw numbers are set next to a matched comparison.

- **Exact strata:** the calendar quarter t0, the industry cell, and an age band.
- **Candidates:** the steady growers at the same quarter end.
- **Distance:** d = max(|dx1|, |dx2|, |dx3| / 2, |dx4| / 2), with x1 = ln(1 + N(t0 - 4)) (size at the start of the spree year), x2 = ln(1 + S(t0 - 4)) (salespeople at the start), x3 = ln(1 + N(t0 - 4)) - ln(1 + N(t0 - 8)) (total growth in the year before) and x4 = ln(1 + S(t0 - 4)) - ln(1 + S(t0 - 8)) (sales growth in the year before). d is rounded to 12 decimals.
- **Controls:** up to 3 candidates with d at or below the caliper, nearest first, ties to the lower company id, with replacement across sprees. Each control gets weight 1/k, k being its spree's number of controls. These are the mechanics of the Kenso Research study *Half of B2B software homepages now say AI. Did it pay off?* and the GTM-to-engineering study.
- **Gaps:** for a share, the spree share minus the weighted control share; for growth, the mean over sprees of the spree's log growth minus the weighted mean of its controls', also shown as 100 x (exp(gap) - 1) percent; for medians, the spree median against the lower weighted median of the controls (the smallest value whose cumulative weight reaches half the total).
- **Intervals:** 1,000 bootstrap resamples of sprees (one per company), each with its matched controls; percentile intervals; seed 73 with a separate random stream per statistic. The bootstrap does not account for the reuse of control companies across sprees, so intervals are somewhat too narrow.
- **Pre-trend placebo:** the same gap in sales and total growth over the year from t0 - 12 to t0 - 8, which no matching variable covers (sprees from 2018 Q1). If its interval excludes 0, the plan says the gaps are reported as not cleanly

identified.

5.3 The matching settings (a deviation from the plan)

As pre-registered (six age bands 0-2, 3-5, 6-9, 10-19, 20+ and unknown; caliper 0.10, which is 0.10 on the sizes and 0.20 on the growth rates), the matching paired only 1,070 of the 4,514 software and IT sprees (23.7%). The steady pool held about 1,257 to 1,590 companies per quarter, split into 18 exact strata, and on whole-number counts a 0.10 caliper on salespeople at the start means the same count for small teams. Before any outcome was computed, 11 variants were compared on match rate and balance using data up to t0 only. The main specification now uses four age bands (0-5, 6-19, 20+, unknown) and a caliper of 0.20 (0.20 on the sizes, 0.40 on the growth rates). The pre-registered settings are reported beside it as a robustness row, and every hypothesis is scored on both (logged decision D15).

Variant	Age strata	Industry strata	Caliper	Scales x1/x2/x3/x4	Matched sprees	Matched, %	Std. diff. size	Std. diff. sales	Std. diff. prior total growth	Std. diff. prior sales growth
pre registered	fine	cells	0.1	1/1/2/2	1,070	23.7	-0.0006	0.0005	0.0403	-0.008
coarse age	coarse	cells	0.1	1/1/2/2	1,315	29.1	-0.0005	0.0008	0.0345	-0.0046
known unknown age	known	cells	0.1	1/1/2/2	1,898	42.1	-0.0013	-0.0001	0.0501	-0.0011
one cell	fine	one	0.1	1/1/2/2	1,748	38.7	-0.0004	-0.0022	0.0507	-0.0116
one cell coarse age	coarse	one	0.1	1/1/2/2	2,070	45.9	-0.0008	-0.0012	0.0527	-0.0099
caliper x2	fine	cells	0.2	1/1/2/2	3,224	71.4	0.0048	-0.0061	0.1103	0.0031
coarse age caliper x2	coarse	cells	0.2	1/1/2/2	3,446	76.3	0.0039	-0.0095	0.1127	0.0113
one cell coarse age caliper x2	coarse	one	0.2	1/1/2/2	3,943	87.4	0.0016	-0.0182	0.1121	0.0061
coarse age sizes 0.2 growth 0.3	coarse	cells	0.2	1/1/1.5/1.5	3,225	71.4	0.0035	-0.005	0.0876	0.0033
one cell coarse age sizes 0.2 growth 0.3	coarse	one	0.2	1/1/1.5/1.5	3,790	84.0	0.0027	-0.0155	0.0895	0.0081
coarse age caliper x3	coarse	cells	0.3	1/1/2/2	4,142	91.8	0.0078	-0.0192	0.1488	0.0396

Standardized differences are the mean difference between matched sprees and their weighted controls divided by the standard deviation over all eligible sprees. Larger companies matched least often under both settings:

Total headcount at the start	Main-sample sprees	Matched, pre-registered settings, %	Matched, main settings, %
under 50	2,761	25.5	79.3
50-199	1,466	22.4	76.7
200-999	265	14.0	47.9
1,000+	<50	suppressed	suppressed

Specification	Caliper	Age strata	Eligible sprees	Matched	Matched, %	Control companies	Controls per spree
Main	0.2	4 bands	4,514	3,446	76.3	4,356	2.5232
Matching as pre-registered	0.1	6 bands	4,514	1,070	23.7	1,305	1.4953
(b) Sprees ending by 2023 Q4	0.2	4 bands	4,155	3,174	76.4	4,042	2.5239
(c) 10+ salespeople at the start	0.2	4 bands	758	545	71.9	811	2.1817
(d) Steady = any growth 0-50%	0.2	4 bands	4,514	3,686	81.7	4,973	2.6405
(e) Matched at the end of the spree year	0.2	4 bands	4,514	2,960	65.6	2,612	2.4034
(f) Narrow sales team	0.2	4 bands	4,234	3,231	76.3	4,106	2.4943
(g) Also matched on other teams' growth	0.2	4 bands	4,514	3,221	71.4	4,025	2.4523
(h) US, raise as a stratum	0.2	4 bands	3,296	2,232	67.7	2,765	2.3799
(i) All industries	0.2	4 bands	27,825	24,684	88.7	38,947	2.777
(j) Earlier year matched too (post hoc)	0.2	4 bands	3,892	2,358	60.6	3,094	2.3668

5.4 Subgroups

Within software and IT, raw and matched (matched gaps from the main matched pairs): spree size (sales growth over the spree year of 50% to under 75%, 75% to under 100%, 100% or more); spree-end year (2017-2019, 2020, 2021, 2022, 2023-2024); total headcount at the start (under 50, 50-199, 200-999, 1,000 or more); salespeople at the start (5-9, 10-24, 25 or more); and, for US-headquartered companies, a recorded Form D raise in the 18 months up to the end of the spree year against none. Industry groups come from the all-industries matching. Cells with fewer than 50 sprees are suppressed.

5.5 Robustness

(a) cut measured from the running peak since t0, 20% below the highest level so far; (b) sprees ending by 2023 Q4, so every outcome window ends by 2025 Q2, against late-added jobs; (c) at least 10 salespeople at the start, against whole-number noise in small teams; (d) steady growers defined as any sales growth above 0% and below 50%; (e) matched at the end of the spree year instead of its start (x1 = ln(1 + N(t0)), x2 = ln(1 + S(t0))), so sprees face steady growers with the same team size at t0; (f) the narrower sales team of the SDR study (SDR/BDR, AE, account management, general sales, partnerships, sales engineering), with sprees, steady growers and outcomes all redefined on it; (g) also matched on non-sales headcount growth over the spree year (caliper 0.40), so sprees face companies whose other teams grew alike; (h) US-headquartered companies only, with the Form D raise flag as an extra exact stratum; (i) all industries; (j) **post hoc, not pre-registered:** also matched on sales and total growth from t0 - 12 to t0 - 8, with the placebo moved to t0 - 16 to t0 - 12 (logged decision D18).

5.6 Exploratory analyses (no hypothesis)

(E1) event-time paths of the median sales team and total headcount from 24 months before to 18 months after the spree end; (E2) gross flows from the person-level spells, counting each person once per company: of the people in sales at t0, the share with any role at the company at t0 + 6, and the people in sales there at t0 + 6 who were not in sales there at t0, per person in sales at t0 (per-company means, controls weighted); (E3) the pooled 18-month change in SDR/BDR, AE and account management headcount.

5.7 Privacy

Company-level and person-level rows stay on Kenso's servers. Only aggregate tables are published; every published cell rests on at least 50 sprees, and any count of people or companies under 50 shows as "<50".

6. Results

6.1 Raw outcomes

Sprees	Outcome	Sprees, n	Value (%, or ratio)	95% interval
5+ salespeople at the start	Cut 20%+ within 6 months	4,514	10.0	9.1 to 10.9
5+ salespeople at the start	Cut 20%+ within 12 months	4,514	20.4	19.2 to 21.5
5+ salespeople at the start	Cut 20%+ within 18 months	4,514	28.7	27.4 to 30.0
5+ salespeople at the start	Growing at 18 months (10%+ above)	4,514	51.8	50.4 to 53.2
5+ salespeople at the start	Flat at 18 months (within 10%)	4,514	19.0	17.8 to 20.2
5+ salespeople at the start	Shrinking at 18 months (10%+ below)	4,514	29.2	27.9 to 30.6
5+ salespeople at the start	Total headcount cut 20%+ within 18 months	4,514	11.9	10.9 to 12.8
5+ salespeople at the start	Cut from the running peak within 6 months (a)	4,514	11.1	10.1 to 12.0
5+ salespeople at the start	Cut from the running peak within 12 months (a)	4,514	26.0	24.7 to 27.2
5+ salespeople at the start	Cut from the running peak within 18 months (a)	4,514	39.3	38.0 to 40.7
5+ salespeople at the start	Sales kept at 6 months (median ratio)	4,514	1.08	1.07 to 1.08
5+ salespeople at the start	Sales kept at 12 months (median ratio)	4,514	1.10	1.09 to 1.10
5+ salespeople at the start	Sales kept at 18 months (median ratio)	4,514	1.10	1.10 to 1.13
5+ salespeople at the start	Total headcount ratio at 6 months (median)	4,514	1.08	1.08 to 1.09
5+ salespeople at the start	Total headcount ratio at 12 months (median)	4,514	1.13	1.13 to 1.14
5+ salespeople at the start	Total headcount ratio at 18 months (median)	4,514	1.16	1.15 to 1.17
0-4 salespeople at the start	Cut 20%+ within 6 months	2,305	12.3	11.1 to 13.6
0-4 salespeople at the start	Cut 20%+ within 12 months	2,305	24.9	23.2 to 26.7
0-4 salespeople at the start	Cut 20%+ within 18 months	2,305	33.1	31.1 to 35.1
0-4 salespeople at the start	Growing at 18 months (10%+ above)	2,305	59.7	57.8 to 61.8
0-4 salespeople at the start	Flat at 18 months (within 10%)	2,305	9.7	8.5 to 10.9
0-4 salespeople at the start	Shrinking at 18 months (10%+ below)	2,305	30.6	28.6 to 32.4
0-4 salespeople at the start	Total headcount cut 20%+ within 18 months	2,305	17.1	15.6 to 18.5
0-4 salespeople at the start	Cut from the running peak within 6 months (a)	2,305	13.9	12.6 to 15.4
0-4 salespeople at the start	Cut from the running peak within 12 months (a)	2,305	32.0	30.1 to 34.0
0-4 salespeople at the start	Cut from the running peak within 18 months (a)	2,305	47.7	45.7 to 49.9
0-4 salespeople at the start	Sales kept at 6 months (median ratio)	2,305	1.18	1.17 to 1.20
0-4 salespeople at the start	Sales kept at 12 months (median ratio)	2,305	1.27	1.20 to 1.30
0-4 salespeople at the start	Sales kept at 18 months (median ratio)	2,305	1.27	1.20 to 1.30
0-4 salespeople at the start	Total headcount ratio at 6 months (median)	2,305	1.18	1.17 to 1.19
0-4 salespeople at the start	Total headcount ratio at 12 months (median)	2,305	1.29	1.26 to 1.32

Sprees	Outcome	Sprees, n	Value (%, or ratio)	95% interval
0-4 salespeople at the start	Total headcount ratio at 18 months (median)	2,305	1.33	1.30 to 1.36

Sprees that started from 0-4 salespeople (raw only, not matched) cut more often (33.1%) and were also more often growing at 18 months (59.7%).

6.2 Matched comparison

Outcome	Sprees	Sprees: value	Steady growers: value	Gap	Gap, 95% interval
Cut 20%+ within 6 months	3,446	10.3	12.5	-2.2	-3.4 to -1.0
Cut 20%+ within 12 months	3,446	20.6	23.7	-3.1	-4.7 to -1.5
Cut 20%+ within 18 months	3,446	29.1	31.6	-2.5	-4.4 to -0.7
Growing at 18 months (10%+ above)	3,446	50.3	43.5	6.8	4.8 to 8.6
Flat at 18 months (within 10%)	3,446	19.7	18.9	0.8	-0.8 to 2.5
Shrinking at 18 months (10%+ below)	3,446	30.0	37.6	-7.6	-9.5 to -5.7
Total headcount cut 20%+ within 18 months	3,446	11.7	14.2	-2.6	-3.9 to -1.2
Cut from the running peak within 6 months (a)	3,446	11.2	13.4	-2.2	-3.6 to -1.0
Cut from the running peak within 12 months (a)	3,446	26.0	29.0	-3.0	-4.9 to -1.1
Cut from the running peak within 18 months (a)	3,446	38.9	40.9	-2.1	-4.0 to -0.1
Sales growth, 6 months (log)	3,446	0.053	-0.001	0.054	0.045 to 0.062
Sales growth, 12 months (log)	3,446	0.074	-0.002	0.076	0.062 to 0.090
Sales growth, 18 months (log)	3,446	0.077	-0.009	0.086	0.069 to 0.104
Total growth, 6 months (log)	3,446	0.076	0.026	0.050	0.043 to 0.056
Total growth, 12 months (log)	3,446	0.119	0.040	0.079	0.069 to 0.089
Total growth, 18 months (log)	3,446	0.140	0.044	0.096	0.082 to 0.110
Sales kept at 6 months (median ratio)	3,446	1.07	1.00	0.07	0.05 to 0.08
Sales kept at 12 months (median ratio)	3,446	1.09	1.00	0.09	0.08 to 0.09
Sales kept at 18 months (median ratio)	3,446	1.10	1.00	0.10	0.09 to 0.10
Total headcount ratio at 6 months (median)	3,446	1.07	1.03	0.05	0.04 to 0.05
Total headcount ratio at 12 months (median)	3,446	1.12	1.05	0.07	0.06 to 0.08
Total headcount ratio at 18 months (median)	3,446	1.15	1.07	0.08	0.07 to 0.10
Placebo: sales growth t0-12 to t0-8 (log)	2,962	0.252	0.191	0.061	0.044 to 0.076
Placebo: total growth t0-12 to t0-8 (log)	2,962	0.235	0.184	0.052	0.040 to 0.064
Placebo: sales growth t0-16 to t0-12 (log)	2,528	0.214	0.185	0.029	0.012 to 0.048
Placebo: total growth t0-16 to t0-12 (log)	2,528	0.253	0.203	0.051	0.036 to 0.064

Gaps are in percentage points for shares, log points for growth, and ratio points for medians. The median sales team at 18 months was 10% above its spree-end level for sprees and 0% for steady growers.

6.3 Balance and pre-trends

Specification	Variable	Sprees, mean	Steady growers, weighted mean	Difference
Main	ln(1 + total headcount) at the start	3.758	3.755	0.003

Specification	Variable	Sprees, mean	Steady growers, weighted mean	Difference
Main	ln(1 + salespeople) at the start	2.149	2.153	-0.005
Main	total growth, year before (log)	0.193	0.159	0.034
Main	sales growth, year before (log)	0.172	0.167	0.005
Main	sales growth over the spree year (log)	0.509	0.147	0.362
Main	total growth over the spree year (log)	0.292	0.113	0.179
Matching as pre-registered	ln(1 + total headcount) at the start	3.725	3.726	-0.001
Matching as pre-registered	ln(1 + salespeople) at the start	2.160	2.160	0.000
Matching as pre-registered	total growth, year before (log)	0.132	0.120	0.012
Matching as pre-registered	sales growth, year before (log)	0.092	0.096	-0.004
Matching as pre-registered	sales growth over the spree year (log)	0.501	0.145	0.356
Matching as pre-registered	total growth over the spree year (log)	0.271	0.103	0.169

Matching balanced size, salespeople and sales growth in the year before closely, and left sprees with slightly faster total growth in the year before (difference 0.034 log points). The placebo failed: in the year from t0 - 12 to t0 - 8, sprees grew sales 0.061 log points faster than their controls (95% interval 0.044 to 0.076) and total headcount 0.052 faster (0.040 to 0.064). The placebo fails in every specification (section 6.5). By the pre-registered rule, the matched gaps are not cleanly identified.

6.4 Event-time paths

Months from the spree end	Sprees: median, end = 100	Steady: median, end = 100	Sprees: median, start = 100	Steady: median, start = 100	Sales log gap	95% interval	Total log gap
-24	50	73	86	86	-0.367	-0.374 to -0.360	-0.213
-21	54	77	90	89	-0.354	-0.363 to -0.345	-0.204
-18	56	80	100	100	-0.344	-0.353 to -0.336	-0.195
-15	60	83	100	100	-0.340	-0.348 to -0.333	-0.185
-12	60	86	100	100	-0.362	-0.367 to -0.358	-0.179
-9	64	86	110	100	-0.310	-0.317 to -0.304	-0.150
-6	70	90	120	108	-0.250	-0.256 to -0.243	-0.116
-3	82	100	138	114	-0.175	-0.180 to -0.169	-0.074
0	100	100	167	117	0.000	0.000 to 0.000	0.000
3	100	100	175	117	0.029	0.023 to 0.035	0.026
6	107	100	183	118	0.054	0.045 to 0.063	0.050

Months from the spree end	Sprees: median, end = 100	Steady: median, end = 100	Sprees: median, start = 100	Steady: median, start = 100	Sales log gap	95% interval	Total log gap
9	108	100	183	120	0.066	0.055 to 0.077	0.066
12	109	100	186	120	0.076	0.062 to 0.089	0.079
15	109	100	186	120	0.081	0.064 to 0.098	0.089
18	110	100	186	120	0.086	0.068 to 0.104	0.096

6.5 Robustness

Specification	Matched sprees	Cut within 18 months, sprees / steady, %	Cut gap, points (95%)	Growing gap, points (95%)	Sales growth gap, log (95%)	Total growth gap, log	Placebo sales gap, log (95%)
Main	3,446	29.1 / 31.6	-2.5 (-4.4 to -0.7)	6.8 (4.8 to 8.6)	0.086 (0.069 to 0.104)	0.096	0.061 (0.044 to 0.076)
Matching as pre-registered	1,070	29.2 / 29.9	-0.8 (-4.3 to 2.6)	4.4 (0.4 to 8.4)	0.047 (0.012 to 0.080)	0.065	0.040 (0.012 to 0.066)
(b) Sprees ending by 2023 Q4	3,174	28.9 / 31.1	-2.3 (-4.3 to -0.3)	6.5 (4.5 to 8.6)	0.083 (0.064 to 0.101)	0.095	0.058 (0.042 to 0.074)
(c) 10+ salespeople at the start	545	16.1 / 18.0	-1.9 (-5.7 to 2.0)	12.2 (7.3 to 17.0)	0.072 (0.042 to 0.105)	0.075	0.023 (0.000 to 0.047)
(d) Steady = any growth 0-50%	3,686	28.8 / 32.2	-3.3 (-5.1 to -1.6)	6.6 (4.8 to 8.4)	0.090 (0.073 to 0.109)	0.096	0.053 (0.037 to 0.069)
(e) Matched at the end of the spree year	2,960	28.0 / 27.5	0.5 (-1.6 to 2.4)	6.6 (4.6 to 8.7)	0.057 (0.037 to 0.074)	0.075	0.063 (0.046 to 0.081)
(f) Narrow sales team	3,231	29.9 / 30.7	-0.8 (-2.8 to 1.1)	6.2 (4.1 to 8.3)	0.075 (0.058 to 0.094)	0.094	0.063 (0.047 to 0.080)
(g) Also matched on other teams' growth	3,221	29.4 / 29.8	-0.5 (-2.5 to 1.3)	4.4 (2.4 to 6.5)	0.051 (0.033 to 0.069)	0.070	0.060 (0.043 to 0.076)
(h) US, raise as a stratum	2,232	28.4 / 30.4	-2.1 (-4.3 to 0.2)	7.3 (4.8 to 9.8)	0.087 (0.063 to 0.110)	0.103	0.067 (0.046 to 0.088)
(i) All industries	24,684	28.0 / 26.3	1.7 (1.1 to 2.3)	3.9 (3.2 to 4.6)	0.041 (0.036 to 0.046)	0.060	0.047 (0.042 to 0.052)
(j) Earlier year matched too (post hoc)	2,358	29.3 / 29.9	-0.6 (-2.8 to 1.7)	5.7 (3.2 to 8.2)	0.068 (0.046 to 0.088)	0.076	0.039 (0.020 to 0.057)

The placebo column shows the t0 - 12 to t0 - 8 sales gap, except for (j), which matches that year and shows t0 - 16 to t0 - 12. In no software and IT specification is the 18-month cut gap above 0 with an interval that excludes 0, and in every one sprees are more often still growing. Across all industries (i), sprees cut 1.7 points more often than their steady growers.

Cuts from the running peak (robustness a), main matching:

Outcome	Sprees, %	Steady growers, %	Gap, points (95%)
Cut from the running peak within 6 months (a)	11.2	13.4	-2.2 (-3.6 to -1.0)
Cut from the running peak within 12 months (a)	26.0	29.0	-3.0 (-4.9 to -1.1)

Outcome	Sprees, %	Steady growers, %	Gap, points (95%)
Cut from the running peak within 18 months (a)	38.9	40.9	-2.1 (-4.0 to -0.1)

6.6 Subgroups

Group	Cell	Sprees (raw)	Cut within 18 months, raw %	Growing at 18 months, raw %	Matched sprees	Cut, matched sprees / steady, %	Cut gap, points (95%)
Spree size	50-74%	2,592	26.5	50.7	2,097	26.8 / 29.8	-2.9 (-5.1 to -0.8)
Spree size	75-99%	571	30.3	49.2	444	30.9 / 35.7	-4.9 (-9.9 to 0.5)
Spree size	100%+	1,351	32.1	54.9	905	33.5 / 33.9	-0.5 (-4.2 to 3.3)
Spree-end year	2017-2019	1,849	25.6	54.0	1,427	25.9 / 28.9	-3.1 (-5.9 to -0.4)
Spree-end year	2020	465	22.8	59.4	367	24.0 / 27.7	-3.7 (-9.0 to 1.6)
Spree-end year	2021	680	25.0	57.9	488	27.3 / 32.9	-5.6 (-10.3 to -0.9)
Spree-end year	2022	660	37.0	43.5	510	36.1 / 35.9	0.2 (-4.9 to 5.3)
Spree-end year	2023-2024	860	35.0	44.5	654	35.0 / 35.6	-0.5 (-4.7 to 3.5)
Total headcount at the start	under 50	2,761	31.7	51.5	2,190	32.0 / 33.8	-1.8 (-4.1 to 0.5)
Total headcount at the start	50-199	1,466	25.2	51.5	1,124	25.4 / 29.6	-4.2 (-7.3 to -1.1)
Total headcount at the start	200-999	265	17.4	54.7	127	13.4 / 13.6	-0.3 (-8.1 to 7.7)
Total headcount at the start	1,000+	<50	suppressed		<50	suppressed	
Salespeople at the start	5-9	3,756	31.2	50.7	2,882	31.5 / 34.1	-2.6 (-4.4 to -0.6)
Salespeople at the start	10-24	570	18.1	56.1	448	19.0 / 21.2	-2.2 (-6.4 to 2.3)
Salespeople at the start	25+	188	11.2	59.6	116	8.6 / 11.6	-3.0 (-9.6 to 4.0)
Raise (US HQ)	US, recorded raise	165	30.3	58.2	112	32.1 / 36.9	-4.8 (-17.4 to 6.0)
Raise (US HQ)	US, no recorded raise	3,131	28.0	52.9	2,380	28.2 / 31.7	-3.5 (-5.6 to -1.3)

6.7 All industries

Industry group	Sprees (raw)	Cut within 18 months, raw %	Growing at 18 months, raw %	Matched sprees	Cut, matched sprees / steady, %	Cut gap, points (95%)
Software and IT	4,514	28.7	51.8	3,446	29.1 / 31.6	-2.5 (-4.4 to -0.7)

Industry group	Sprees (raw)	Cut within 18 months, raw %	Growing at 18 months, raw %	Matched sprees	Cut, matched sprees / steady, %	Cut gap, points (95%)
Other technology, telecom and media	1,115	28.2	44.4	900	28.9 / 24.3	4.6 (1.0 to 8.4)
Financial services	2,323	22.2	50.6	1,978	22.1 / 23.3	-1.2 (-3.4 to 1.0)
Business and professional services	4,283	33.0	41.5	3,853	32.9 / 30.7	2.2 (0.4 to 3.8)
Manufacturing, industrial and energy	7,407	23.8	42.1	7,101	23.6 / 20.8	2.8 (1.6 to 4.0)
Healthcare and life sciences	976	20.8	53.2	712	22.3 / 24.4	-2.1 (-6.0 to 1.7)
Consumer, public sector and the rest	7,112	31.3	42.2	6,637	31.5 / 28.3	3.2 (2.0 to 4.6)
No industry on the record	95	43.2	35.8	57	42.1 / 28.9	13.2 (-1.5 to 28.4)

6.8 Gross flows and sub-functions (exploratory)

Measure (per-company means)	Sprees	Steady growers	Gap (95%)
Share of the people in sales at t0 still at the company at t0 + 6	66.4	70.7	-4.3 (-5.2 to -3.5)
Share still in sales at the company at t0 + 6	61.9	66.6	-4.7 (-5.5 to -3.8)
People in sales at t0 + 6 who were not at t0, per person in sales at t0	0.60	0.42	0.17 (0.15 to 0.20)

The flows count 6,724 companies at 10,522 company-quarters (matched sprees and their controls) from 2,496,209 role spells. Each person counts once per company, so the counts run 2.4% below S at the sprees, which counts a person once per title label.

Role	Sprees: people at t0	Sprees: people at t0 + 6	Sprees: change, %	Steady growers: change, %
SDR/BDR	4229	5827	37.8	37.1
Account executives	9680	12382	27.9	13.2
Account management	9091	10974	20.7	8.4

These are pooled sums, so larger companies weigh more than in the per-company outcomes.

7. Hypotheses and how they scored

The seven pre-registered hypotheses predicted that sprees overshoot: more cuts and slower sales growth than steady growth, concentrated in sales, rising with spree size, after raises and in 2021-2022. Hypotheses 1, 3 and 4 are scored on the matched comparison, the others on the raw outcomes of all main-sample sprees.

Hypothesis	Specification	Metric	Value (fractions or log points, 6 decimals)	Verdict
1	Main	18-month cut-rate gap, sprees minus matched steady growers	-0.025343 [-0.044254, -0.006570]	wrong (placebo pre-trend interval excludes 0: not cleanly identified)
1	Matching as pre-registered	18-month cut-rate gap, sprees minus matched steady growers	-0.007788 [-0.043150, 0.026016]	wrong (placebo pre-trend interval excludes 0: not cleanly identified)

Hypothesis	Specification	Metric	Value (fractions or log points, 6 decimals)	Verdict
2	Raw (all main-sample sprees)	share growing (>= +10%) and shrinking (<= -10%) at 18 months	growing 0.517944, shrinking 0.292424	wrong (shrinking part right)
3	Main	18-month sales growth gap (mean log gap)	0.085641 [0.068645, 0.104378]	wrong (placebo pre-trend interval excludes 0: not cleanly identified)
3	Matching as pre-registered	18-month sales growth gap (mean log gap)	0.047480 [0.011781, 0.079962]	wrong (placebo pre-trend interval excludes 0: not cleanly identified)
4	Main	|total headcount gap| < |sales gap| at 18 months	total 0.096286 vs sales 0.085641	wrong (placebo pre-trend interval excludes 0: not cleanly identified)
4	Matching as pre-registered	|total headcount gap| < |sales gap| at 18 months	total 0.065014 vs sales 0.047480	wrong (placebo pre-trend interval excludes 0: not cleanly identified)
5	Raw (all main-sample sprees)	18-month cut rate by spree size 50-74% / 75-99% / 100%+	0.265432 / 0.302977 / 0.320503	right
6	Raw (all main-sample sprees)	18-month cut rate, US sprees with / without a recorded Form D raise	0.303030 (165 sprees) vs 0.280102 (3131 sprees)	right
7	Raw (all main-sample sprees)	spree-end year group with the highest 18-month cut rate	2017-2019 0.255814; 2020 0.227957; 2021 0.250000; 2022 0.369697; 2023-2024 0.350000	right (highest: 2022)
placebo	Main	sales growth gap, year t0-12 to t0-8	0.060529 [0.044166, 0.076346]	pre-trends differ
placebo	Matching as pre-registered	sales growth gap, year t0-12 to t0-8	0.040179 [0.011950, 0.066190]	pre-trends differ

In short: 1 wrong (sprees were not cut more often); 2 wrong (half or more were still growing; the shrinking part held); 3 wrong (sales grew faster after sprees, not slower); 4 wrong (the total-headcount gap was larger than the sales gap); 5 right (the cut rate rises with spree size); 6 right on point estimates, with only 165 raise-backed sprees and overlapping intervals; 7 right (sprees ending in 2022 had the highest cut rate). Hypotheses 1, 3 and 4 are also not cleanly identified, because the placebo failed. The verdicts are the same on the pre-registered matching.

8. Verification

An independent re-analysis, written from the study plan without seeing this study's code, recomputed the study's headline numbers. It got only the plan's question, hypotheses, method and logged decisions (D1 to D19, with the result numbers removed) and the study extract; it did not open this study's code, outputs, logs or report. It wrote its code from the plan, used its own bootstrap seed, and checked its code with a second implementation. Besides the shared code it was allowed to reuse, it read one constant in another study's code, the list of the 18 software and IT industry labels; the plan lists the same labels, and its second implementation checks that the two lists are the same.

The rules for a match were written down before its numbers were read (logged decision D19): counts must be equal; shares must agree to 0.1 percentage points, log gaps to 3 decimals, and medians and per-person rates to 2 decimals, the precision at which they are reported; bootstrap interval bounds must lie within a quarter of the study's interval

width, because the random draws differ. Of the 107 numbers both computed, 87 match and the 20 interval bounds are within noise; 0 differ. Its rebuild of the extract for 2 of the 64 company buckets from the shared headcount tables found no company-quarter cell where the sales or total headcount differed.

The verifier also found a gap in the extract. Its entry rule (5 or more salespeople at some quarter end from 2016 Q1 to 2023 Q3) could not see a spree from 0-4 salespeople that ended from 2023 Q4 to 2024 Q3 at a company that never had 5 salespeople before. The rule was widened to also take every company with 10 or more salespeople at some quarter end from 2017 Q1 to 2024 Q3, which every spree needs (logged decision D20), and every step ran again. Software and IT sprees from 0-4 salespeople rose from 2,217 to 2,305; no main-sample, matched, flow or sub-function number changed. The verifier then ran its unchanged code on the rebuilt extract, and the comparison here is from that run. The first comparison, before the fix, had 87 matches, 20 interval bounds within noise and 0 differences.

Kind	Must agree to	Numbers	Match	Within noise	Differ
count	equal	25	25	0	0
share	0.1 percentage points	51	51	0	0
log	3 decimals	5	5	0	0
median	2 decimals	4	4	0	0
rate	2 decimals	2	2	0	0
ci	a quarter of the interval width	20	0	20	0

Selected numbers (shares as fractions, gaps in fractions or log points, 6 decimals):

Number	Kind	Study	Verifier	Result
Main-sample software and IT sprees	count	4,514	4,514	match
Sprees from 0-4 salespeople	count	2,305	2,305	match
Matched sprees	count	3,446	3,446	match
Matched pairs	count	8,695	8,695	match
Raw: cut 20%+ within 18 months	share	0.286664	0.286664	match
Raw: still growing at 18 months	share	0.517944	0.517944	match
Matched: cut, sprees	share	0.291062	0.291062	match
Matched: cut, steady growers	share	0.316405	0.316405	match
Matched: cut gap	share	-0.025343	-0.025343	match
Cut gap, interval low	ci	-0.044254	-0.043675	within noise
Cut gap, interval high	ci	-0.006570	-0.008269	within noise
Matched: still-growing gap	share	0.067808	0.067808	match
Matched: sales growth gap (log points)	log	0.085641	0.085641	match
Placebo: sales growth gap (log points)	log	0.060529	0.060529	match
Placebo gap, interval low	ci	0.044166	0.044020	within noise
Pre-registered matching: cut gap	share	-0.007788	-0.007788	match
Check (j): cut gap	share	-0.005725	-0.005725	match
All industries: cut gap	share	0.017029	0.017029	match
Flows: still at the company, sprees	share	0.663855	0.663855	match
Flows: still at the company, steady growers	share	0.707233	0.707233	match

Number	Kind	Study	Verifier	Result
Extract rebuild: company-quarter cells that differ	verifier only		0	not computed by the study

9. Alternative explanations

1. **Spree companies are a faster-growing kind of company.** This is the strongest alternative, and the data support it in part: two to three years before the spree end, spree companies grew sales 6.2% faster than their matched controls. Matching on that year as well (j, post hoc) leaves the cut rates at 29.3% against 29.9% and the still-growing shares at 48.1% against 42.4%, but a gap remains one year earlier still (0.039 log points, 0.020 to 0.057). The post-spree growth gap may reflect momentum rather than anything the spree did. Named as the main limitation; the report says "linked with".
2. **Team size and whole-number noise.** Matched at the start of the spree year, steady growers end it with smaller sales teams, where one or two departures make a 20% cut. Matched on team size at t0 instead (e), the cut rates are 28.0% and 27.5%; with at least 10 salespeople at the start (c), 16.1% and 18.0%. The small advantage of sprees in the main cut gap is mostly team size; the lack of a disadvantage is robust.
3. **Jobs added late to profiles.** The last quarters undercount new jobs, which would make recent outcome windows look like cuts. Sprees and their controls are compared in the same calendar quarters, and with every window ending by 2025 Q2 (b) the gap is -2.3 points.
4. **Regression to the mean from noisy headcount.** A spree that is partly measurement noise would revert and make sprees look worse; sprees did not do worse, so noise does not explain the result.
5. **Page moves and acquisitions.** A company page that absorbs an acquired team shows a spree that never reverts. The spree definition is about sales headcount only; matching on other teams' growth (g) gives a cut gap of -0.5 points.
6. **Sales roles retitled.** A rep who becomes a customer success manager leaves the sales count. On the narrow sales team (f) the cut gap is -0.8 points.
7. **Raises.** Money raised could carry both sprees and survival. With the raise flag as an exact stratum for US companies (h), the cut gap is -2.1 points.
8. **The steady band.** With any growth from 0% to 50% counted as steady (d), the gap is -3.3 points.
9. **Industry mix.** The result is specific to software and IT: across all industries, sprees cut 1.7 points more often (i), and in business services, consumer and public, industrial, and other technology and media companies the gap is positive (section 6.7).

10. Limitations

- **Six countries.** Staff outside the US, UK, Canada, Australia, Ireland and New Zealand are missing; a company that moved sales jobs abroad looks like it cut them, and sprees abroad are not seen.
- **Profiles, not payroll.** Headcount is rebuilt from self-reported public profiles. People add new jobs late, leave short jobs off and delete profiles; only currently active profiles exist, so older years undercount.
- **A cut is a fall in headcount.** It cannot tell a layoff from people who left and were not replaced.
- **Titles define the team.** Title labels are rules on normalized titles; promotions that overwrite an old title cannot be seen.
- **Matching covers 76.3% of sprees.** Companies with 200 to 999 people matched 47.9% of the time, against 79.3% for those under 50 (section 5.3; companies with 1,000 or more people had fewer than 50 sprees, too few to report), so the matched results speak mostly for smaller companies; the raw results cover all sprees.

- **Deviation and post-hoc check.** The matching settings changed from the plan (section 5.3), before any outcome was computed; check (j) was added after the first results. Both are reported beside the pre-registered version.
- **Intervals.** The bootstrap resamples sprees with their controls and ignores the reuse of controls across sprees, so intervals are somewhat too narrow. Many subgroups are reported without a correction for multiple comparisons.
- **Funding.** Form D covers US issuers and misses many raises; only 165 software and IT sprees followed a recorded raise.
- **Industry and age come from today's company record.**
- **Correlation, not causation.** The design is a matched comparison with an event study; it shows what followed sprees, not what sprees caused.

11. Deviations from the pre-registered plan

1. Matching settings (decision D15), section 5.3.
2. Post-hoc check (j) and the earlier placebo (decision D18).
3. All thresholds in whole-number form (D16) and distance rounding (D17) are implementation details of the plan, written down before the verification.
4. The extract's entry rule was widened after the verification (decision D20), section 8. It changed only the counts of sprees from 0-4 salespeople.

12. Sources and reuse

- Kenso internal data: Kenso's dataset of public professional profiles, work histories and company records, through Kenso's shared headcount history extract (built for the SDR study; build of 2026-10-17).
- SEC Form D quarterly data sets (US Securities and Exchange Commission, 2008 to 2026), through Kenso's shared funding-events extract (built for the first sales hire study).
- Title taxonomy: the shared sales title taxonomy of the GTM engineer study, as applied in the shared headcount history.
- The Kenso Research study *Did AI kill the SDR role?*: software and IT labels, narrow sales team, reporting-lag measurement.
- The Kenso Research study *Who gets cut first in a B2B layoff? Recruiters, then SDRs*: sales group and industry groups. For context, the layoffs study found that sales was cut about in line with its size when software and IT companies shrank in 2022-2024.
- The Kenso Research studies *Sales and marketing draw level with engineering at about 50 people* and *Half of B2B software homepages now say AI. Did it pay off?*: matching mechanics.