

DATA ANALYTICS REPORT

Referral Campaign ROI Analysis

Revenue Impact • Cost-Benefit Analysis • Return on Investment

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March 31 – April 27, 2018 | Germany • Spain • France • Italy

Introduction

This report evaluates whether an e-commerce referral campaign generated a positive financial return on its €10-per-user acquisition cost across four European markets over a 28-day period.

The dataset covers 14,329 users and 24,981 orders placed between March 31 and April 27, 2018. Users are classified as referral (used a referral code at signup) or non-referral. The analysis tests whether referred users behave differently enough to justify the acquisition spend, calculates the incremental revenue attributable to the campaign, and delivers a final ROI figure in both Euros and US Dollars.

The USD conversion uses the XE.com mid-market rate of €1 = \$1.1582 as of March 24, 2026. The ROI percentage is currency-neutral and identical in both denominations.

Campaign Overview

Of 14,329 users, 9,140 (63.8%) were referred through the campaign. These users generated 67.2% of all orders and 67.3% of total revenue.

14,329 Total Users 4 markets, 28 days	9,140 Referral Users 63.8% of user base	5,189 Non-Referral Users 36.2% of user base
24,981 Total Orders All users combined	16,779 Referral Orders 67.2% of all orders	€1.13M Total Revenue €762K ref + €372K non-ref

Revenue by Market

Market	Non-Ref Orders	Ref Orders	Non-Ref Rev.	Ref Rev.
Germany	1,437	3,160	€66,767	€148,491
Spain	1,852	3,743	€83,956	€169,980
France	2,785	5,651	€124,603	€254,019
Italy	2,128	4,225	€96,685	€189,582
TOTAL	8,202	16,779	€372,011	€762,072

Behavioral Analysis

Referral users purchase 16.1% more frequently than non-referral users — a difference confirmed as statistically significant. The average order value is identical between groups.

Average orders per user were calculated across all 14,329 registered users. Referral users averaged 1.836 orders versus 1.581 for non-referral users. A two-sample t-test ($t = 15.999$, $p < 0.0001$) confirms this gap is not attributable to chance.

The average order value is virtually identical: €45.42 for referral users versus €45.36 for non-referral users. This means the entire revenue advantage is driven by repeat purchase behavior, not larger one-time baskets. Repeat frequency is the more durable and compounding form of loyalty.

STATISTICAL TEST — ORDERS PER USER

Two-sample t-test comparing purchase frequency between referral and non-referral groups:

H_0 : Referral users purchase at the same rate as non-referral users

H_1 : Referral users purchase more frequently

t-statistic = 15.9993

p-value < 0.0001

Result = Reject H_0 — significant at $\alpha = 0.05$

The 16.1% purchase frequency uplift is statistically significant, not a product of random variation.

Purchase Behavior Summary

Metric	Non-Referral	Referral
Avg. orders per user	1.581	1.836
Avg. revenue per user	€71.69	€83.38
Avg. order value	€45.36	€45.42
Total orders	8,202	16,779
Total revenue	€372,011	€762,072
Purchase frequency uplift	—	+16.1%
Revenue per user uplift	—	+16.3%

ROI Calculation

The campaign cost €91,400 to acquire 9,140 referred users. To isolate the return, we compare actual referral revenue against what those users would have generated had they behaved like non-referral users.

Step 1 — Establish the Counterfactual Baseline

If the 9,140 referral users had purchased at the non-referral rate (1,581 orders at €45.36 per order), their expected revenue would be:

COUNTERFACTUAL REVENUE (WHAT WE WOULD HAVE EARNED WITHOUT THE LIFT)

$$9,140 \text{ users} \times 1.581 \text{ orders} \times €45.36 \text{ per order} \\ = €655,571$$

This is the revenue baseline — what referral users would have generated if the campaign had no behavioral effect.

Step 2 — Calculate Incremental Revenue

The difference between actual referral revenue and the counterfactual baseline is the incremental value the campaign created:

INCREMENTAL REVENUE (THE BEHAVIORAL PREMIUM)

Actual referral revenue	=	€762,072
Counterfactual baseline	=	€655,571
Incremental revenue	=	€106,501

This €106,501 represents revenue that exists solely because referral users purchased 16.1% more frequently than they would have otherwise.

Step 3 — Deduct Campaign Cost

The total acquisition cost of the campaign at €10 per referred user:

CAMPAIGN ACQUISITION COST

$$9,140 \text{ referral users} \times €10 \text{ per user} = €91,400$$

Step 4 — Net Return & ROI

The final return and ROI are shown below in both Euros and US Dollars. The USD conversion uses the XE.com mid-market rate of €1 = \$1.1582 (March 24, 2026). The ROI percentage is identical in both currencies.

Item	Euros (€)	US Dollars (\$)
Referral revenue — actual	€762,072	\$882,694
Referral revenue — counterfactual	€655,571	\$759,494

Incremental revenue (A - B)	€106,501	\$123,351
Campaign acquisition cost	€91,400	\$105,859
Net return (Incremental - Cost)	€15,101	\$17,491
ROI (Net ÷ Cost) × 100	16.52%	16.52%

EXCHANGE RATE NOTE

USD conversion applied at the mid-market EUR/USD rate of €1 = \$1.1582 sourced from XE.com on March 24, 2026. The ROI formula is $[(\text{Net Return} \div \text{Campaign Cost}) \times 100]$. Because both the numerator and denominator are divided by the same exchange rate, the percentage is currency-neutral and reads identically in EUR and USD terms.

Verdict & Recommendation

The campaign is ROI-positive. For every €91,400 invested, it generated €15,101 (\$17,491 USD) in net incremental return — a 16.52% ROI over a single 28-day window.

The behavioral evidence is strong: referral users purchase significantly more frequently, the gap is statistically proven, it holds across all four markets, and it is driven by repeat behavior rather than inflated basket sizes. The campaign is worth continuing.

The ROI is real but not wide. At €10 per user, the margin between incremental revenue (€106,501) and cost (€91,400) is €15,101. Any increase in acquisition cost above approximately €11.65 per user would eliminate the surplus entirely. Cost discipline is essential to maintain positive returns.

This analysis also measures only 28 days of behavior. Referral users who continue purchasing at 1.836 orders per period will compound the lifetime value premium substantially beyond what is captured here. The true long-run ROI is likely higher than the 16.52% measured in this window.

€15,101	16.52%	€91,400
Net Return (EUR) = \$17,491 USD	ROI (28-day window) €1 = \$1.1582 rate	Campaign Cost 9,140 users × €10

Key Takeaways

Purchase frequency is the driver. Referral users place 16.1% more orders. Average order value is essentially identical (€45.42 vs. €45.36), so all incremental revenue comes from loyalty, not larger one-time spends.

The result holds across all four markets. Germany, Spain, France, and Italy each show referral users generating proportionally higher revenue. France is the largest market, with referral users producing €254,019 in revenue.

The ROI margin is thin but real. A 16.52% return is meaningful for a single month. The €15,101 net return (\$17,491) is positive, but the €11.65 breakeven cost-per-user leaves limited room for acquisition cost increases.

Lifetime value multiplies the return. This analysis captures 28 days only. If the 16.1% purchase frequency advantage persists, the cohort-level ROI will compound significantly over longer time horizons.

Methodology

Tool / Method	Application
Two-sample Welch t-test	Purchase frequency significance testing
Counterfactual revenue model	Isolating the behavioral premium attributable to the campaign
ROI formula: (Net ÷ Cost) × 100	16.52% return on €91,400 campaign spend
XE.com EUR/USD mid-market rate	€1 = \$1.1582 as of March 24, 2026