Source: orders.csv

Customer Retention at a Gift-Ware Retailer

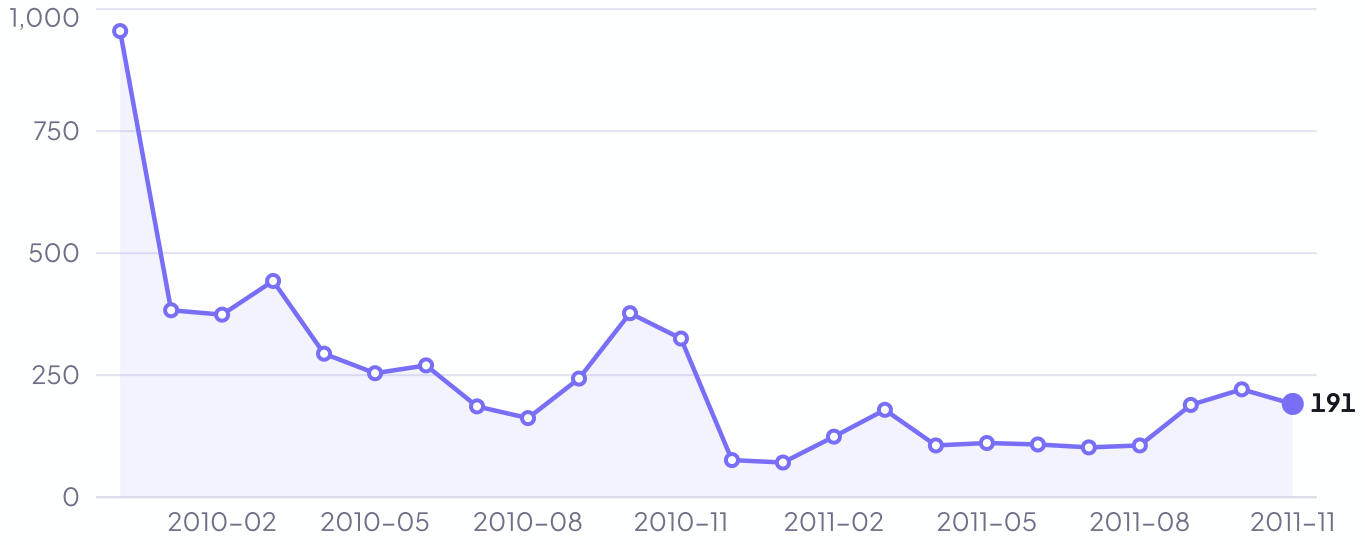
Between December 2009 and November 2011, 5,850 customers placed an order and 4,200 of them, a 71.8% share, placed more than one order. Returning customers bring in most revenue in every month after December 2009, and month-3 retention ranges from 42.51% for the December 2009 cohort to 9.54% for November 2010. The spread across cohorts suggests checking what changed in acquisition and follow-up from late 2010 onward.

New Customers per Month

955 customers placed their first order in December 2009, the highest count of the 24 months. The series low followed 13 months later at **71** in January 2011, **93%** below that peak, and the count recovered to **191** in November 2011. December 2011 is left out because the data stops on 9 December 2011.

New Customers Acquired per Month, Dec 2009 to Nov 2011

Counts the customers who placed their first order in each calendar month from December 2009 through November 2011, excluding December 2011 because the data ends on 9 December.



The drop from the peak came in one month. January 2010 added **383** new customers, **572** fewer than December 2009 and the largest month-over-month fall in the series. Counts then held between **162** and **443** through November 2010. A second fall closed the year, from **325** in November 2010 to **76** in December 2010, and January 2011 brought the low. The data does not show what caused either drop, so marketing activity and seasonality in the months around both year ends are worth checking.

Recovery started in February 2011 at **124**. From there through November 2011, monthly counts ran between **102** and **221**. The last three months, September to November 2011, averaged **200**, close to twice the **107** average of April through August. The exit level is one fifth of the December 2009 peak and sits above only three 2010 months, July, August, and December.

Across the full series, **5,850** customers placed a first order, an average of **244** a month against a median of **190**. The 13 months from December 2009 through December 2010 hold **4,342** of them, **74%** of the total, and the 11 months of 2011 add **1,508**. December 2009 alone accounts for **16%**, and no later month reached half its count. The late-2011 recovery is the trend worth watching in 2012 data.

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Cohort Retention Table, Months 1 to 12

Each cell is the share of a cohort's customers who placed at least one order in that calendar month, counted from month 1, the first calendar month after the cohort month. The twelve cohorts run from December 2009 through November 2010 and together hold 4,266 customers. Three patterns stand out: the December 2009 cohort, the largest of the twelve, tops every column, cohort size carries no signal about retention, and the swings line up by calendar month.

Customer Retention by Cohort, Months 1-12

For each of the 12 monthly cohorts from December 2009 to November 2010, the share of its customers who placed at least one order in calendar months 1 through 12 after their first order. Orders from December 2011 are excluded so every cohort has a full 12-month window.

Cohort month	Customers in cohort	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
2009-12	955	35.3%	33.4%	42.5%	38.0%	35.9%	37.7%	34.2%	33.6%	36.2%	42.2%	49.5%	37.6%
2010-01	383	20.6%	31.1%	30.5%	26.4%	30.0%	25.8%	23.0%	27.9%	31.9%	30.3%	17.2%	22.2%
2010-02	374	23.8%	22.5%	29.1%	24.6%	20.1%	19.3%	28.6%	25.4%	27.5%	11.5%	12.6%	15.2%
2010-03	443	19.0%	23.0%	24.2%	23.3%	20.3%	24.6%	30.2%	27.5%	10.8%	11.5%	14.2%	20.1%
2010-04	294	19.4%	19.4%	16.3%	18.4%	22.4%	27.6%	26.2%	10.5%	10.9%	7.5%	13.9%	13.9%
2010-05	254	15.7%	16.9%	17.3%	17.7%	25.6%	21.3%	12.6%	5.9%	8.3%	11.4%	13.4%	15.4%
2010-06	270	17.4%	18.9%	20.4%	23.0%	28.5%	12.6%	8.9%	8.1%	11.9%	10.7%	13.7%	14.8%
2010-07	186	15.6%	18.3%	29.6%	29.0%	14.0%	11.3%	14.5%	14.5%	11.3%	13.4%	14.5%	13.4%
2010-08	162	20.4%	29.6%	32.1%	17.3%	11.7%	9.9%	12.3%	13.6%	13.0%	13.0%	12.3%	15.4%
2010-09	243	22.6%	23.5%	12.3%	9.1%	10.3%	13.6%	9.9%	12.8%	13.2%	11.5%	9.9%	21.8%
2010-10	377	25.7%	14.6%	12.5%	8.8%	8.2%	13.0%	13.8%	10.6%	9.3%	10.6%	13.0%	19.1%
2010-11	325	17.5%	9.2%	9.5%	7.7%	8.6%	12.9%	9.8%	8.6%	8.9%	11.1%	14.5%	25.5%

The December 2009 cohort stays between **33.4%** (month 2) and **49.5%** (month 11, November 2010) in all twelve months, and opens at **35.3%** in month 1. The eleven later cohorts span **5.9%** (May 2010, month 8) to **32.1%** (August 2010, month 3), so their strongest cell stays under the December 2009 cohort's weakest month. In month 1 the later cohorts run **15.6%** to **25.7%**, each under the December 2009 opening share.
The size pattern holds across the month 12 column:

- March 2010, the second-largest cohort at **443** customers, ranks fifth of twelve at **20.1%**, with seven cohorts below it.
- August 2010, the smallest cohort, ranks seventh at **15.4%**.
- November 2010, mid-sized, ranks second at **25.5%**, while July 2010 ranks last at **13.4%**.

The swings inside the later cohorts track the calendar more than cohort age. Ten later cohorts drop below the prior month in December 2010, at month numbers from 2 to 11 depending on the cohort. Each of those ten holds an October or November 2010 value at least 11 points above its December value. The March 2010 cohort shows the swing, **30.2%** in October 2010 (month 7) and **27.5%** in November 2010 (month 8) before **10.8%** in December 2010 (month 9).
Shared timing across cohorts of different ages suggests the calendar sets part of each cell's level. The December 2009 cohort dips in the same month, to **37.6%** in month 12, and still leads that column. The three youngest cohorts all close above their month 11 shares of **9.9%** to **14.5%**, and those closing cells land in September through November 2011, which suggests the autumn lift repeats a year later.
The table gives no reason for the December 2009 cohort's level. Worth checking is what set those December 2009 first orders apart, such as the acquisition channel or the offer behind them. Retention in this table depends on the cohort and the calendar month, with cohort size playing no part.

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Repeat Purchase Rate

Between December 2009 and November 2011, **4,200 of 5,850** customers placed more than one order, a repeat purchase rate of **71.8%**. One counted item is one distinct customer, and more than one order means at least two orders in the period. About seven in ten customers came back after a first order.

Share of Customers With More Than One Order, Dec 2009 to Nov 2011

Counts customers with at least one order from December 2009 through November 2011 and shows how many of them ordered more than once, as a share of all customers in that period.

Total customers	Repeat customers (more than one order)	Repeat purchase rate
5,850	4,200	71.8%

The remaining **1,650** customers, **28.2%** of the base, placed a single order. The data counts orders, not reasons for returning, so the cause of the high rate sits outside this figure. Three checks would explain where the repeat behavior comes from:

- Whether repeat orders cluster in particular months or product groups
- How order size differs between a customer's first and later orders
- What the **1,650** one-time customers have in common

A repeat rate this high implies that much of the revenue likely depends on existing customers. When most customers order at least twice, later sales rest more on returning buyers than on new ones, so a slide in this rate would move a broad share of the base. Watching the rate each period, next to the count of one-time customers, would show a shift early.

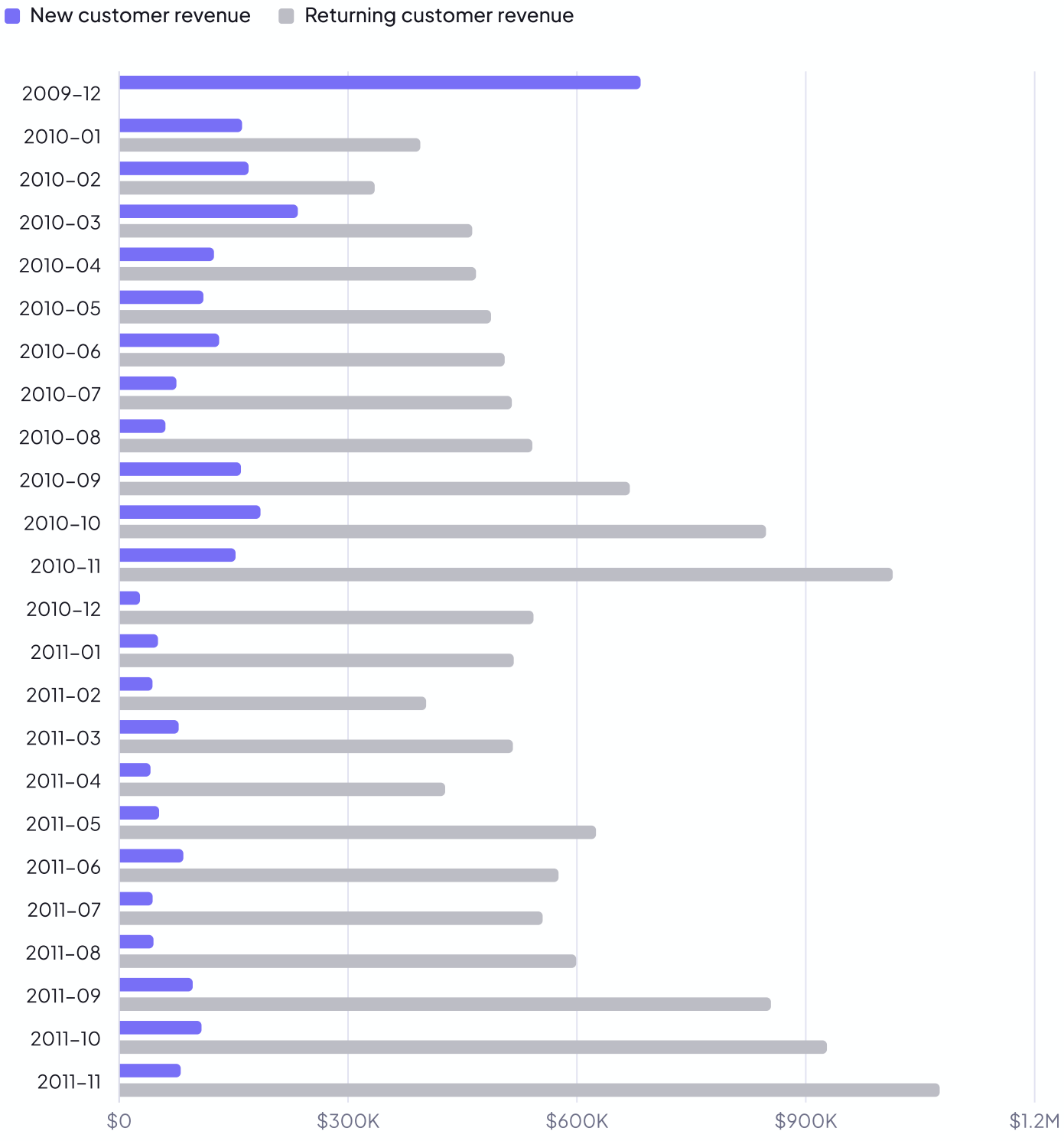
Revenue From New and Returning Customers

The 24 months from December 2009 to November 2011 add up to **16,857,596** in revenue. Returning customers account for **13,858,895** of that, or **82%**. December 2009 is the extreme case: all **683,504** of the month comes from customers in their first-order month and returning customers bring **0**, since no earlier month exists in the data for any customer.

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Monthly Revenue From First-Time vs Returning Customers, Dec 2009 to Nov 2011

Monthly revenue split into orders from customers in their first-order month and orders from all other customers, from 2009–12 through 2011–11. Revenue is the sum of order values.



From January 2010, returning revenue leads every month. It starts at **394,724**, drops to its low of **334,917** in February 2010, and ends at **1,075,518** in November 2011, the highest month in the series. November 2010 already reached **1,013,905**, so the closing month is **6%** above it. November is the top returning month in both years, which suggests a late-year peak in orders from existing customers.

That concentration grows over time. The returning share of monthly revenue is **66%** in February 2010, its lowest point, and **93%** in November 2011. Eight of the 24 months, all from December 2010 on, are at **90%** or more, with December 2010 the highest at **95%**. From late 2010 on, nearly all revenue in a month comes from customers who have ordered before.

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New-customer revenue moves the other way. The strongest months after the opening one are March 2010 at **234,185** and October 2010 at **185,267**. From **169,642** in February 2010 the figure falls **84%** to **27,319** in December 2010, the lowest month of the whole series and **4%** of the **683,504** of December 2009. The data does not show what caused the fall, so it is worth checking whether fewer first-time customers ordered or whether their orders were smaller.
The low level holds through 2011. New-customer revenue stays between **41,084** in April 2011 and **107,955** in October 2011, and September to November 2011 bring **285,036** against **497,469** in the same three months of 2010, a fall of **43%**. In November 2011 customers in their first-order month bring **7%** of the month's **1,156,206**. The period closes with returning revenue at its highest month and the first-order total small, so reliance on existing customers is the main pattern of these two years.

Best and Worst Cohorts at Month 3

Month-3 retention is the share of a cohort's new customers who placed at least one order in the calendar month three months after their first order. The December 2009 cohort leads the ranking at **42.51%**, with **406 of 955** customers ordering again in March 2010. Against it, the November 2010 cohort records **9.54%**, with **31 of 325** ordering again in February 2011, the lowest share of the six cohort months in the ranking. The gap between those two cohort months is **32.97 percentage points**.

Month-3 retention by cohort: top 3 and bottom 3

Ranks the three best and three worst cohorts by the share of new customers who placed at least one order in the calendar month 3 months after their first order, among cohorts first ordering from December 2009 through November 2010. Orders from December 2011 onward are excluded.

Cohort month	Cohort size (new customers)	Customers ordering in month 3	Month-3 retention %	Tier
2009-12	955	406	42.51%	Best
2010-08	162	52	32.10%	Best
2010-01	383	117	30.55%	Best
2010-11	325	31	9.54%	Worst
2010-09	243	30	12.35%	Worst
2010-10	377	47	12.47%	Worst

The six cohort months in the ranking:

- **December 2009**: **42.51%, 406 of 955** customers
- **August 2010**: **32.1%, 52 of 162**
- **January 2010**: **30.55%, 117 of 383**
- **October 2010**: **12.47%, 47 of 377**
- **September 2010**: **12.35%, 30 of 243**
- **November 2010**: **9.54%, 31 of 325**

Cohort size does not explain the order. The largest cohort ranked, December 2009 at 955 customers, ranks first, and the smallest, August 2010 at 162, ranks second.
The three cohort months labeled Worst are consecutive months. September, October, and November 2010 hold the three lowest shares among the ranked cohorts, and August 2010 sits at **32.1%** immediately before that stretch. The data does not show why the shares drop across those months. A first check is how the September through November 2010 cohorts looked at first order compared with the August 2010 cohort, the nearest cohort month before them. September, October, and November 2010 are the cohort months that warrant a closer look at follow-up.

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