

WHITE PAPER



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## What is the Best Way to Calculate Transactional Loyalty?

**Polk**

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## About the Author

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## Loyalty is a Key Industry Metric

Loyalty is always a critical issue in the automotive industry. In the current climate of dramatically declining sales, loyalty becomes even more critical for automotive manufacturers who cannot afford to lose existing customers. More than ever before, auto manufacturers and brands would benefit from strategies to maintain their current customer base.

Loyalty can be expressed in different forms. Viral loyalty is defined by consumer willingness to advocate a brand, while emotional loyalty represents a special affinity between the consumer and the brand. For purposes of this paper, we focus on transactional loyalty, defined as repeat purchases from the same manufacturer, brand or model. Transactional loyalty is the foundation of customer lifetime value and profitable growth through increased market share.

Despite the clear value of loyalty as a key metric in measuring the strength of a brand, the automotive industry currently does not have a standard method for calculating it. This paper analyzes two different approaches to calculating automotive loyalty – the disposal methodology and the household methodology – and discusses the advantages and disadvantages of each.

## Calculating Loyalty: An Overview

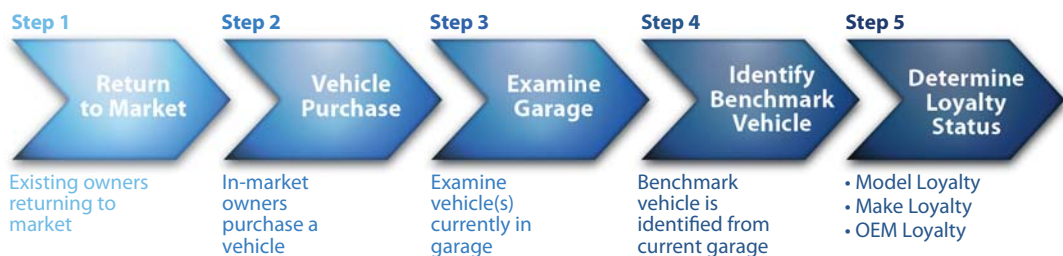
Transactional loyalty can be calculated at the OEM/manufacturer level (e.g., GM), at the make/brand level (e.g., Chevrolet) and at the model/nameplate level (e.g., Cobalt). **Figure 1** below provides a high-level look at how loyalty is calculated. Steps 3 and 4 in this process vary depending on whether loyalty is measured via the household or the disposal methodology.

## Two Key Factors in Calculating Loyalty

Understanding the differences between the disposal and household methodologies of calculating loyalty requires an understanding of two key factors that are part of the loyalty calculation:

- **Purchased Vehicle:** The vehicle bought by an in-market household during the timeframe under consideration (month, quarter, etc.). All transaction types are included: cash, finance and lease. For purposes of this paper, we are only looking at vehicles purchased new.
- **Benchmark Vehicle:** A vehicle previously bought (cash or finance) or leased by the same household returning to market. As part of the loyalty calculation, the benchmark vehicle serves as the point of comparison to the purchased vehicle. How the benchmark vehicle is designated depends on whether the household or disposal methodology is being used, as explained in the following section of this paper. For purposes of this paper, we are only looking at vehicles bought or leased new and still owned by the household or vehicles disposed of within a six-month time frame around the new vehicle purchase.

**Figure 1: Steps for Calculating Loyalty**





## Two Methods of Calculating Loyalty: Disposal and Household

There are two primary methods of calculating loyalty in the automotive industry:

- **Disposal methodology:** Measures vehicle replacement patterns; assumes that one vehicle is disposed of from the garage for every new vehicle purchased.
- **Household methodology:** Analyzes all vehicles currently owned by a household to determine loyalty; does not assume that a vehicle is disposed of every time one is purchased. (It's highly common for consumers to add vehicles to their household fleet without disposing of a vehicle.)

Loyalty can be calculated at the manufacturer, make and model levels using both measurement approaches.

### Disposal Methodology

Many manufacturers use the disposal methodology due to its simplicity and because it is relatively easy to collect the necessary data to compute loyalty scores using this approach. Essentially, in the disposal methodology, the vehicle being disposed of is the benchmark vehicle. Loyalty is calculated by comparing this benchmark vehicle to the purchased car or truck. Typically, loyalty behavior is measured among new customers via new vehicle buyer surveys.

#### Example: Disposal Methodology Calculation

- Consumer A purchases a 2009 Chevy Malibu. This is the purchased vehicle.
- Consumer A disposes of a 2008 Chevrolet Silverado. This is the benchmark vehicle.
- Consumer A is manufacturer and make loyal, but not model loyal.

Under the disposal methodology, the calculation below is used to determine a loyalty percentage, or the percentage of consumers returning to market who are loyal.

#### Model Loyalty [%] =

*Number of households purchasing a vehicle of the same model as the benchmark vehicle (vehicle disposed of)*

*Number of households returning to market that own the benchmark vehicle (vehicle disposed of)*

Manufacturer and brand loyalty are computed using the same calculation.

There are several different ways to gather data for use in the disposal methodology. Polk believes that two commonly-used approaches contain major flaws, as described below:

- **Survey data:** In this approach, consumers respond to a mail, phone or web survey about the last vehicle they bought and eliminated from their household. In addition to the lack of accuracy associated with self-reported data, this approach often doesn't use a large enough sample to account for geographic differences and the actual market share of the purchased vehicle. In order to make the sample representative, it needs to be weighted by market share, geography and buyer demographics. This weighting requires use of the entire census of vehicles registered during a particular time period.
- **DMS data:** Another method of identifying vehicles that have been disposed of is to collect vehicle trade-in information from dealer management systems (DMS). While this approach has the benefit of being quick, it has several major shortcomings. First, many dealerships are not willing to share their DMS data, so the sample is incomplete. Secondly, only about half of all sales transactions involve a trade-in. Finally, DMS systems often assign leases to the lien holder rather than to the household leasing the vehicle, which makes tracking the loyalty status impossible. This can significantly skew loyalty metrics: historical data has revealed different loyalty behaviors for lessees compared to consumers who purchase vehicles.

Polk feels that the most accurate way to calculate loyalty using the disposal methodology is by using the entire census of vehicle registrations during a predefined time period. Because consumers do not always dispose of vehicles at exactly the same time they purchase new ones, Polk "counts" disposals that occur within a timeframe of three months prior and three months following (and including the month of) the new vehicle purchase. We have found that 45 percent of disposed vehicles will be re-registered to a different household within this six-month timeframe.

Polk's disposal approach has the advantage of covering the largest sample possible, making it the least prone to selection bias. However, the accuracy of the loyalty metric has to be balanced with a reporting lag of several months until the disposed vehicle has been re-registered to a new owner.



### Household Methodology

More than 10 years ago, Polk introduced a household-based methodology to provide automotive manufacturers with a more accurate way to measure vehicle owners' loyalty. Unlike disposal loyalty calculations, the household methodology does not assume that a vehicle is being replaced for every new vehicle purchased. Therefore, this methodology takes into account the 30 percent of households that simply add a new vehicle to their household garage.

The key difference between the disposal and household methodologies lies in the benchmark vehicle selection. While the disposal methodology always looks at the last vehicle disposed of, the household methodology examines the entire garage fleet to select an appropriate benchmark vehicle as shown in **Figure 2** at the bottom of the page. The loyalty status of a household is determined by comparing the purchased vehicle with the benchmark vehicle.

#### Example: Household Methodology Calculation

- Consumer B purchases a Chevrolet Malibu. This is the purchased vehicle.
- Consumer B's garage contains a Cadillac CTS and a Honda Civic. Because the garage does not contain a vehicle of the same make (Chevrolet) or model (Malibu), the Cadillac CTS (also a GM vehicle) is the benchmark vehicle.
- Consumer B is manufacturer loyal, in this case to GM.

Under the household methodology, the following calculation is used to determine a loyalty percentage, or the percentage of consumers returning to market who are loyal.

#### Model Loyalty [%] =

$$\frac{\text{Number of households purchasing the same model as the benchmark vehicle}}{\text{Number of households returning to market that own the benchmark vehicle}}$$

#### Example: Comparing the Household and Disposal Loyalty Methodologies

- Consumer C purchases a Honda Accord and disposes of a Chevrolet Malibu.
- Consumer C's garage also contains a Honda Civic and a Ford F-150.

Under the disposal methodology, the Chevrolet Malibu is the benchmark vehicle (since it's being disposed of). Therefore, the consumer is not considered manufacturer, make or model loyal. In fact, Chevrolet would be "charged" with losing a customer.

On the other hand, the household methodology considers the consumer to be make and manufacturer loyal because the Honda Civic (which is also in the garage, but is not being disposed of) is the benchmark vehicle.

#### Comparison of the Household and Disposal Loyalty Methodologies

To compare the two methodologies of calculating loyalty, we analyzed results in five key areas:

- Market Coverage
- Simplicity
- Benchmark Vehicle Recency
- Relationship with Market Share
- Timeliness of Results

**Figure 2: Selection of the Benchmark Vehicle in the Household Loyalty Methodology**

If the new vehicle purchased matches the...	MODEL of a vehicle in the garage...	...the vehicle in the garage is the benchmark vehicle...	...and the household is MODEL loyal.
	MAKE of a vehicle in the garage...		...and the household is MAKE loyal.
	MANUFACTURER of a vehicle in the garage...		...and the household is MANUFACTURER loyal.
If the new vehicle purchased does not meet any of the criteria above ...		...then the benchmark vehicle is the vehicle in the garage most recently acquired ...	... and the household is considered a DEFECTOR



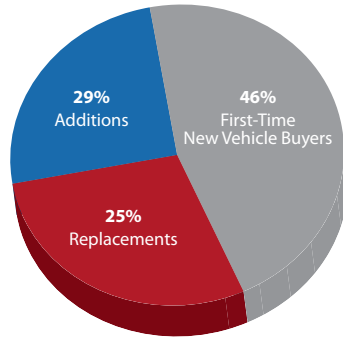
### Market Coverage

Looking only at new vehicle purchases and currently-owned vehicles that had been previously purchased new, there are three distinct categories of buyers:

- First-time new vehicle buyer (either a first-time buyer or a buyer upgrading from a used to a new vehicle for the first time)
- Buyer replacing a vehicle
- Buyer adding a vehicle to the household garage

Figure 3 shows the distribution of these categories for new vehicle purchases occurring in a typical month.

Figure 3: Distribution of New Vehicle Transactions



The household methodology provides far better market coverage, capturing both disposals and additions for a total of 54 percent of all transactions. Because the disposal methodology only works when a vehicle is eliminated from the garage, this approach only captures 25 percent of the total market.

When looking at the number of households accounted for in the two methodologies, the superiority of market coverage in the household

methodology becomes very clear. Looking at transactions from June 2008, total retail sales were slightly above 1.1 million. Of these transactions, roughly 560,000 were included in the household methodology and 280,000 in the disposal methodology, as shown in Figure 4 at the bottom of the page.

### Simplicity

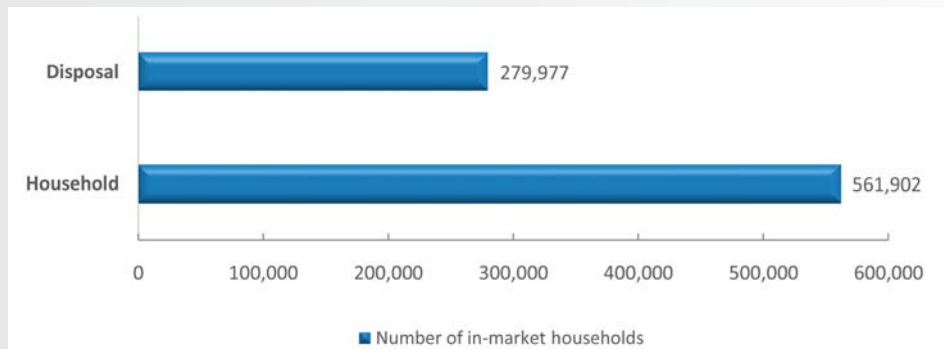
The disposal methodology has the advantage of being easy to understand and to calculate, even though assuming a one-to-one vehicle purchase-to-replacement ratio may not always accurately depict all buying behavior. The household methodology, on the other hand, is more complex and may be harder for organizations to understand and adopt.

### Benchmark Vehicle Recency

An important factor differentiating the two methodologies is the recency of the benchmark vehicle in the household garage. In general, the household methodology tends to designate the most recently acquired vehicle in the garage as the benchmark vehicle far more often than the disposal methodology. This is mainly due to the fact that households tend to dispose of their older vehicles first, meaning that the vehicle purchased last is often used as the point of comparison for the loyalty calculation in the disposal methodology.

It's safe to assume that consumers' experiences with their most recent vehicle often influence their next purchase decision. From this perspective, the household methodology better reflects recent vehicle ownership experiences. Using the household methodology, the most recent vehicle in the garage is selected as the benchmark vehicle 68 percent of the time compared to just 29 percent of the time with the disposal methodology.

Figure 4: Comparison of Coverage of U.S. Market – Disposal vs. Household Methodologies





**Relationship with Market Share**

In the automotive industry, market share is a recognized indicator of market performance. Therefore, the best loyalty metrics are those that are closely tied to market share.

However, there is never going to be a 1-to-1 correlation between market share and loyalty for several reasons. For one thing, first-time buyers are not counted in loyalty calculations. Secondly, market share changes can occur much faster than changes in loyalty, and can be manipulated through incentives, financing offers and other promotions.

When we calculated the relationship between loyalty and market share for both the household and the disposal methodologies, we found a tighter relationship between retail market share and the household loyalty methodology. Changes in market share account for 43 percent of the change in household loyalty, compared to just 31 percent of the change in disposal loyalty. This indicates that the household methodology aligns better with market performance of a brand as defined by market share. As with other categories of durable goods (e.g., appliances), automotive market share dominance can be partially predicted by repeat sales. In the case of automotive loyalty, household measures do a better job of aligning with market share among retail buyers.

**Timeliness of Results**

Timely results are critical in order for auto manufacturers to make use of available loyalty data. To find out which methodology provides results more quickly, we compared the household methodology to the most accurate way of calculating disposal loyalty: using registration data.

Under the disposal methodology, loyalty cannot be calculated until the disposed vehicle has been resold and registered to a new owner. Especially in the current economy, the sales cycle could be quite long. On the other hand, the household methodology of calculating loyalty provides results in roughly 45 days, meaning that automotive manufacturers can obtain and use this valuable loyalty information in a timely manner. Polk’s experience shows that the household methodology produces results on average six months faster than a disposal measurement using the complete census of vehicles registered during a particular time period. While a survey-based disposal measurement would be quicker, the results would be far less representative and accurate.

**Summary: Household Methodology Outperforms Disposal in All but One Area**

Figure 5 below compares the household methodology to the disposal methodology (calculated using registration data) on key criteria.

**Figure 5: Comparison of Household and Disposal Methodologies on Key Criteria**

	Household Methodology	Disposal Methodology	Rationale
Market Coverage	√		Household methodology captures more than double the market share of disposal
Simplicity		√	Disposal methodology is easier to calculate and communicate than household
Benchmark Vehicle Recency	√		Household methodology selects the most recent vehicle as the benchmark vehicle 68 percent of the time, compared to 29 percent for disposal
Relationship with Market Share	√		Household loyalty accounts for 43 percent of market share variation, compared to 31 percent for disposal loyalty.
Timeliness of Results	√		Household methodology produces results six months faster than the most accurate disposal methodology (using registration data)



### **Conclusion: Household Loyalty is Superior in Most Cases**

Market share is commonly used to measure the success of an automotive manufacturer or brand. However, as mentioned previously, market share can change in the short term due to incentives or other promotions. Loyalty, on the other hand, is a much less volatile metric than market share – making it a truer measurement of performance over a longer time period.

Knowing that loyalty is important to measure, the question becomes one of determining the best way to do so. As shown in this paper, Polk’s household methodology clearly outperforms the disposal methodology of measuring loyalty. While the disposal methodology may be appropriate in some cases when organizations want a quick “read” on loyalty, the household methodology is superior in many cases.

Knowing the most effective way to measure loyalty is only part of the process. It’s essential that manufacturers make the appropriate investments in loyalty to achieve long-term success, and that they recognize that investments in loyalty initiatives won’t typically be recognized right away. However, manufacturers and brands that are able to build and maintain loyalty over the long run will be the most successful.

#### **About R. L. Polk & Co.**

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