

## BMW car dealership

The dealership has kept track of how people walk through the dealership and the showroom, what cars they look at, and how often they ultimately make purchases.

They are hoping to mine this data by finding patterns in the data and by using clusters to determine if certain behaviors in their customers emerge.

Here the results of the 5-means clustering algorithm:

1. **Cluster 0.** This group we can call the "Dreamers," as they appear to wander around the dealership, looking at cars parked outside on the lots, but trail off when it comes to coming into the dealership, and worst of all, they don't purchase anything.
2. **Cluster 1.** We'll call this group the "M5 Lovers" because they tend to walk straight to the M5s, ignoring the 3-series cars and the Z4. However, they don't have a high purchase rate — only 52 percent. This is a potential problem and could be a focus for improvement for the dealership, perhaps by sending more salespeople to the M5 section.
3. **Cluster 2.** This group is so small we can call them the "Throw-Away" because they aren't statistically relevant, and we can't draw any good conclusions from their behavior. (This happens sometimes with clusters and may indicate that you should reduce the number of clusters you've created).
4. **Cluster 3.** This group we'll call the "BMW Babies" because they always end up purchasing a car and always end up financing it. Here's where the data shows us some interesting things: It appears they walk around the lot looking at cars, then turn to the computer search available at the dealership. Ultimately, they tend to buy M5s or Z4s (but never 3-series). This cluster tells the dealership that it should consider making its search computers more prominent around the lots (outdoor search computers?), and perhaps making the M5 or Z4 much more prominent in the search results. Once the customer has made up his mind to purchase the vehicle, he always qualifies for financing and completes the purchase.
5. **Cluster 4.** This group we'll call the "Starting Out With BMW" because they always look at the 3-series and never look at the much more expensive M5. They walk right into the showroom, choosing not to walk around the lot and tend to ignore the computer search terminals. While 50 percent get to the financing stage, only 32 percent ultimately finish the transaction. The dealership could draw the conclusion that these customers looking to buy their first BMWs know exactly what kind of car they want (the 3-series entry-level model) and are hoping to qualify for financing to be able to afford it. The dealership could possibly increase sales to this group by relaxing their financing standards or by reducing the 3-series prices.