

Analysis of Six Criteria for 4 Cars

Purchasing cars for the fleet represents a significant investment for the firm, so making sure that the car choice is a good one over the 5+ years in service is important. Six criteria were chosen as the most important aspects of the car: safety, maintenance costs, MSRP, insurance costs, fuel economy, and resale value. Four SUVs from the 2017 model year were looked at: the Ford Escape, the Honda CR-V, the Hyundai Santa Fe, and the Toyota RAV 4. The findings are summarized at the end of the report.

The most ubiquitous measure for safety is the National Highway Transportation Safety Administration (NHTSA) rating for overall car safety. This rating measures a cars ability to drivers and passengers in the case of a frontal crash, a side barrier crash, a crash from a pole to the driver side, and roll-over crashes. The Ford Escape, Honda CR-V, and Toyota RAV 4 all received 5-star ratings and are deemed very safe vehicles. The Hyundai Santa Fe was unrated. As this was the most important aspect of consideration from the firm, it is weighted heavily in our final analysis.

The second most important consideration from the firm was the price point of the car. We looked at the most expensive price of a given car according to Edmunds.com (Edmunds.com Inc., 2019). The data is summarized below:

Make	Model	MSRP	Weighted (Out of 7)
Ford	Escape	\$24,998	7.00
Honda	CR-V	\$30,998	0.69
Hyundai	Santa Fe	\$31,651	0.00
Toyota	RAV 4	\$26,435	5.49

Figure 1: The cost of the 4 cars. Cheaper cars are weighted more.

The third most important criteria for the firm was the maintenance costs. The costs over the course of five years was analyzed from Edmunds.com. The average was then calculated to get the weighting. The data is summarized below:

Make	Model	Maintenance (After 1 Year)	Maintenance (After 2 Year)	Maintenance (After 3 Year)	Maintenance (After 4 Year)	Maintenance (After 5 Year)	Average Maintenance	Weight (Out of 5)
Ford	Escape	\$627	\$348	\$1,810	\$727	\$1,071	\$917	4.7
Honda	CR-V	\$621	\$325	\$1,751	\$768	\$1,087	\$910	5.0
Hyundai	Santa Fe	\$488	\$331	\$1,629	\$825	\$1,457	\$946	3.1
Toyota	RAV 4	\$566	\$375	\$1,745	\$1,361	\$969	\$1,003	0.0

Figure 2: The maintenance costs over 5 years. The average is calculated to deduce the weight.

Cheaper costs are weighted more.

There were three other criteria that were analyzed that were not as central to the firm's analysis. However, they are still important and summarized in the below charts:

Make	Model	Resale Value	Weighted (Out of 5)
Ford	Escape	\$11,998	0.00
Honda	CR-V	\$18,791	5.00
Hyundai	Santa Fe	\$13,791	1.32
Toyota	RAV 4	\$15,099	2.28

Figure 3: The resale value for the 4 cars. A higher resale value is weighted more.

Make	Model	Insurance (After 1 Year)	Insurance (After 2 Year)	Insurance (After 3 Year)	Insurance (After 4 Year)	Insurance (After 5 Year)	Average Insurance	Weighted (Out of 7)
Ford	Escape	\$626	\$645	\$664	\$684	\$705	\$675	2.8
Honda	CR-V	\$615	\$633	\$652	\$672	\$692	\$662	3.1
Hyundai	Santa Fe	\$711	\$732	\$754	\$777	\$800	\$766	0.0
Toyota	RAV 4	\$633	\$65	\$672	\$692	\$712	\$535	7.0

Figure 4: The insurance costs over 5 years. The average is calculated to deduce the weight. Cheaper costs are weighted more.

Make	Model	City Fuel Economy	Hwy Fuel Economy	Combined Fuel Economy	Weighted (Out of 7)
Ford	Escape	22	28	24.7	0
Honda	CR-V	25	31	27.7	7
Hyundai	Santa Fe	22	29	25.15	1.05
Toyota	RAV 4	22	28	24.7	0

Figure 5: The fuel economy measured in MPG. The combined fuel economy is used to calculate the weight.

Based on the 6 criteria, weights were assigned using a linear interpolation method.

The chart below summarizes the data:

Make	Model	MSRP Weight (out of 7)	Resale Weight (out of 5)	Insurance (out of 7)	Maintenance (out of 5)	Fuel Economy (out of 7)	Safety Rating (out of 10)	Sum
Ford	Escape	7.0	0.0	2.8	4.7	0.0	10.0	24.5
Honda	CR-V	0.7	5.0	3.1	5.0	7.0	10.0	30.8
Hyundai	Santa Fe	0.0	1.3	0.0	3.1	1.1	0.0	5.5
Toyota	RAV 4	5.5	2.3	7.0	0.0	0.0	10.0	24.8

Figure 6: A chart summarizing the car weights

Based on the criteria, the value car would be the Honda CR-V. While expensive, based on all the other factors, it balances out the high initial purchase price. The worst car is the Hyundai Santa Fe. To be fair, the data is slightly skewed due to a lack of safety rating.

Bibliography

Edmunds.com Inc. (2019, January 15). *True Cost to Own*. Retrieved from edmunds.com