The exercise focuses on a hypothetical e-commerce company that wants to know if resources should be focused on improving the app or website.

The relevant metrics are:

* Avg. Session Length: Average session of in-store style advice sessions.
* Time on App: Average time spent on App in minutes
* Time on Website: Average time spent on Website in minutes
* Length of Membership: How many years the customer has been a member.
* Yearly Amount Spent: Total amount spent per year per user

The only clear 1:1 correlation between the five variables is Length of Membership to Yearly Amount Spent. This is an intuitive correlation, but doesn’t provide insight as to which channel should be improved.

I performed a linear regression on the first four variables, to understand which of them has the greatest impact on Yearly Amount Spent. The training only used 30% of the sample data, so that the remaining 70% could be used to verify the model.

The coefficients from the test were:

Table

Description automatically generated

One unit increase of a variable would lead to an increase of Yearly Amount Spent by the respective coefficient’s value. For example, an increase of one minute of Time on App for a user would result in an increase of $38.59 in Yearly Amount Spent.

While the Time on App has a coefficient of 38.59, the Time on Website has a coefficient of 0.19.

In the current paradigm, it would make more sense for the company to improve the App, in order to take advantage of this higher coefficient.

At this point, it would be worthwhile to examine the current state of the App and the Website. It is possible that the Website is underdeveloped, and with minimal resources and development the Website could be drastically improved. Or it is possible that the Website and App are equally good, and the users of the this e-commerce business prefer shopping on an App.