**Price Elasticity Assignment**

The car-sharing company *ShareIt* has been in the business for quite a while and its customer base has been growing over the past years. However, changing pricing strategies has led to varying demand in the past, thereby impacting ShareIt’s revenue. As of January 1st 2022, ShareIt wants to launch a new portfolio, but its impact on the demand and the revenue is not yet clear.

You are requested to build a forecasting model to predict the impact of the new portfolio on the company’s demand (defined by the number of reservations) and revenue in the first 6 months of 2022. The company needs these figures split by trip type (as defined in the data set).

You are given a data set of all customer reservations from January 2017 onwards. Between 2017 and 2022, there have been 3 different portfolios in place that can be used to assess the relationships between price and the demand. The following table gives an overview of all portfolios:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 01.01.2017-30.06.2018 | 01.07.2018-30.09.2020 | 01.10.2020-31.12.2021 | 01.01.2022- |
| Price per Hour | 2.50 CHF | 3.00 CHF | 2.00 CHF | 1.80 CHF |
| Price per KM | 0.80 CHF | 0.90 CHF | 0.70 CHF | 0.60 CHF |

We propose that you start with a high-level overview of reservations, revenue, and customer numbers over time.

Things to think about:

* How would you establish a relationship between price and the demand (number of reservations)?
* How does the number of reservations translate into total revenue?
* What level of aggregation makes sense for modeling and forecasting for this data set?
* How does customer acquisition and churn impact demand?

The goal of this assignment is to get a glimpse into how you approach a new data challenge, how you code, and how you discuss findings with data experts and/or upper management.

Assuming that your notebook will be used by others to forecast demand in the future, please comment your code and write in any useful checks that might help others to run it.

For your demonstration of code / slides, we will provide a screen on site. If you would like, you can connect your laptop or send us your material in advance.

In case you have any questions or want to discuss your approach upfront, please do not hesitate to reach out to us.