

# GMBA 7098: Statistics and Data Analysis (Fall 2014)

## A Case of Statistical Data Analysis

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## Ticket pricing

- ▶ Suppose you are going to perform in a theater.
- ▶ How would you price your tickets?
- ▶ Suppose you do uniform pricing:
  - ▶ How would you estimate the demand as a function of your price?
- ▶ Suppose you do price discrimination:
  - ▶ How would you determine the number of categories?
  - ▶ How would you allocate seats to categories?
  - ▶ How would you estimate the demands of all categories as functions of all prices?

## Accept? Reject?

- ▶ Suppose a theater calls you offer you a specific day.
- ▶ It's Saturday evening; you are ready for the performance; tickets can be sold as the usual way.
- ▶ However, it is just three weeks from now.

## Accept? Reject?

- ▶ You need to estimate how much sales revenue may you get if you accept the offer.
- ▶ And the length of the selling season is a key factor.
- ▶ How to quantify the impact of the length on the sales revenue?

# Regression

- ▶ Regression may be a solution.
- ▶ Collect past data.
- ▶ Input all possible independent variables.
- ▶ Select independent variables.
- ▶ Eventually, we obtain the coefficient for the length of the selling season.

# Data

- ▶ For the show that we are going to play, find past data for performances that:
  - ▶ Were similar shows.
  - ▶ Were at the same or similar places.
  - ▶ Were at similar timing.
  - ▶ Were priced in a similar way.
- ▶ For each past show, collect:
  - ▶ The final sales outcome.
  - ▶ The length of the selling season.

## Result

- ▶ Indeed the coefficient is positive.
- ▶ And it is not very large.