1. Introduction

**hotel revenue management is important - demand forecasting is essential**

**why rm is important?**

**why demand is essential?**

* **improving accuracy can increase xx% of revenue**
* **uncertain, can drive pricing xxx**

Hotel revenue consists of price and demand, and demand forecast is essential for successful revenue management since it has high uncertainties and has direct impact on issues such as inventory management, pricing strategies, and marketing plans. Different from industries such as retail where most of the bookings happen instantly when the clients arrive, the hotel industry usually sell the room ahead of the customer arriving, and thus generate valuable advance bookings information.

**historically what methods have been using (this part serves as a literature review)**

* **time series**
* **pickup methods**
* **others**

**machine learning, on the other hand…**

* **widely used in areas…**
* **why? because…**

**machine learning + hotel**

* **very few research in the hotel industry due to…**

**this research serves as a bridge!**

1. Machine Learning (theoretical)
2. Empirical Study
   1. data description
   2. methods/models
   3. results
3. Conclusion & Discussion