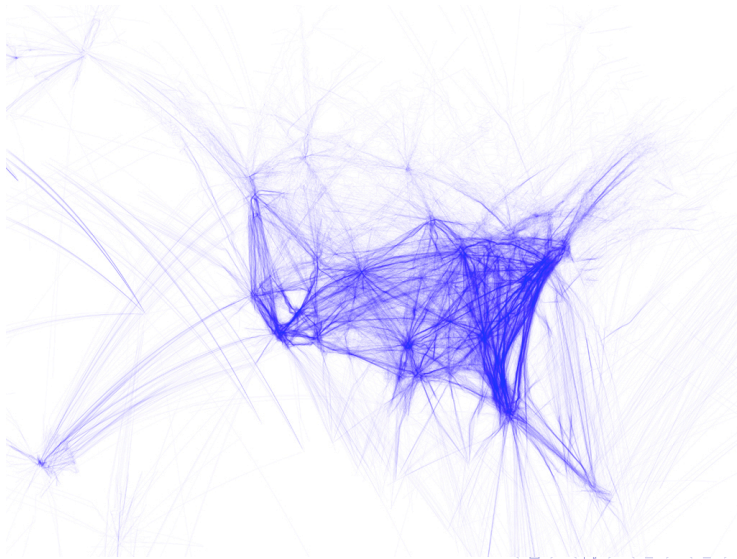


# Project 2: The Plight of the Late Flight

Andrew Bernath, Heather Kitada, Ethan Edwards

Oregon State University

May 15, 2014



# Contents

## 1 Overview and Question of Interest

- Question of Interest
- Choosing A Metric
- Narrowing Scope

## 2 Population-Based Findings

## 3 Sample-based Findings

## ■ Sample Frame

## ■ Findings

## ■ Sampling Performance

## 4 Discussion, Obstacles and Solutions

## 5 Future Work

## 6 Questions

# Overview

- Data: Bureau of Transportation Statistics (BTS)
- Last 25 years
- 30 Unique carriers
- 376 Unique origins



# Question of Interest

Is there evidence that delay times for a particular airline is improving over the last 25 years?



# How do we define "improvement" in delay?

Improvement is defined as negative change in delay time, where delay can be measured using the following metrics:

- Arrival delay
  - What customers about
- OR
- Carrier + Late Aircraft delays
  - What carriers are able to control



# Narrowing Scope

- Ran all airline and years
- Only kept airlines with 10+ years of service
  - 10+ is enough to discern a pattern
- Aggregating to creating yearly averages
  - Average over seasonal effects to compare year to year

# Population-Based Findings

- WAITING FOR WORK FROM ETHAN AND ANDREW



# Sample-based Findings

- 1 Stratify by unique carrier
- 2 Stratify by year (1989-2013)
- 3 Stratify by origin airport size  
(as determined by flight traffic volume)
  - Proportional sample from strata based on number of flights



# Sample Frame

Assumption: Due to coordination of air traffic control efforts, flights originating from airports of similar traffic volume would have similarities in delay patterns

- Found traffic volume for each origin over 25 years
- Found average traffic volume
- Ordered and stratified based on size
  - Create subsets of carriers
  - Used *%in%* when filtering



## Findings

# Findings



# Sampling Performance





# Bias



# Discussion, Obstacles and Solutions



# Future Work



# Questions

*Google? Which airline is sexy?*