

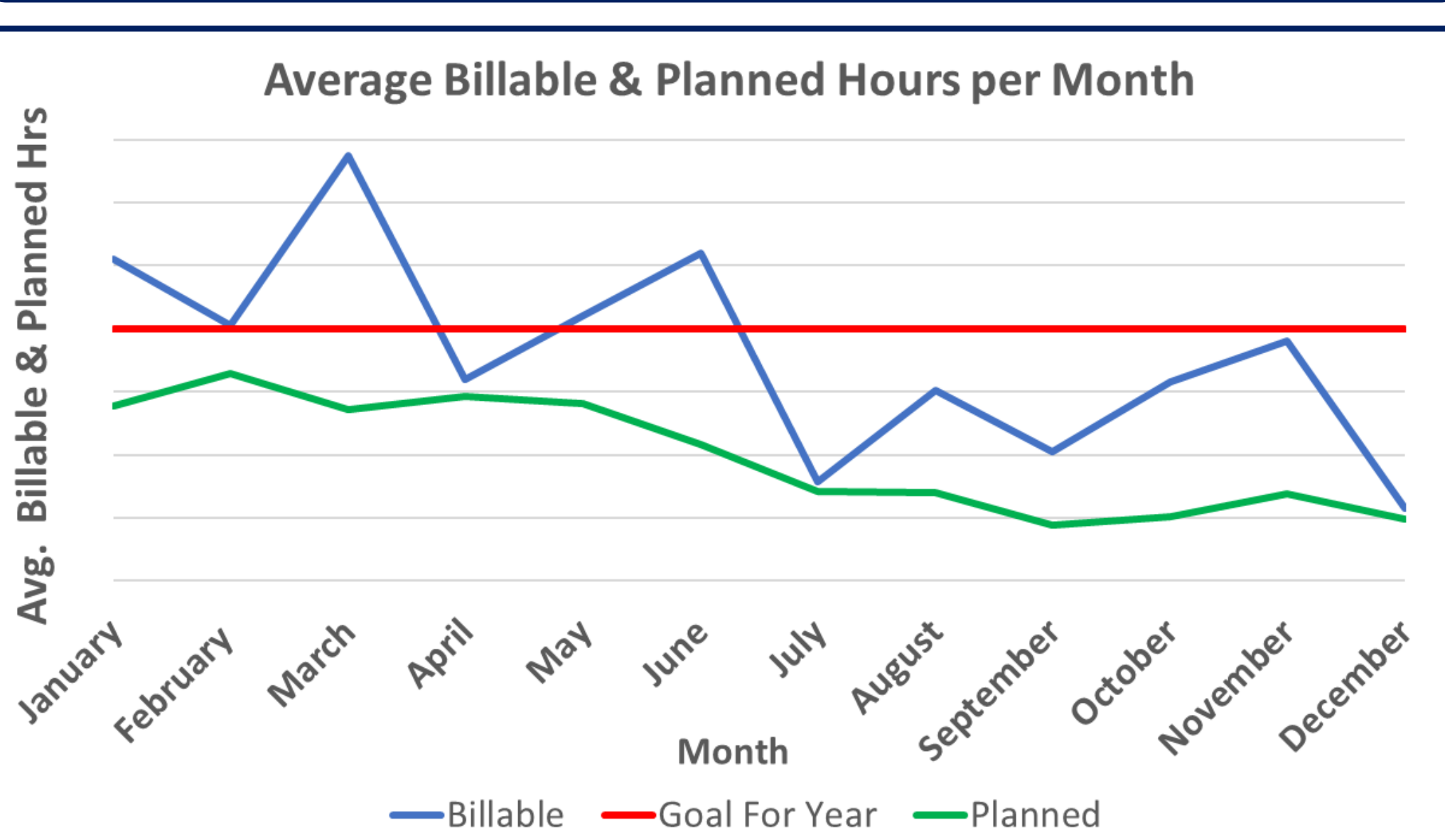
Problem Definition

- **Barrington Consulting Group (BCG)** offers consulting services in Nova Scotia. They provide services in Healthcare, Communications, Privacy, Strategy, Transformation, and Digital.
- They use Excel to forecast project capacity, focusing on understanding and calculating utilization, vacation, billable, and non-billable hours.
- The **aim of the project** is to seek accurate insights on consultant utilization and reasons for inaccuracies in estimating billable hours, which directly impacts revenue.

Project Scope

- Exploring all **Excel Capacity** Worksheets.
- Creating analysis related to consultants and projects in addition to **utilization**.
- Recommendations on data entry for the capacity worksheet.

Initial Analysis

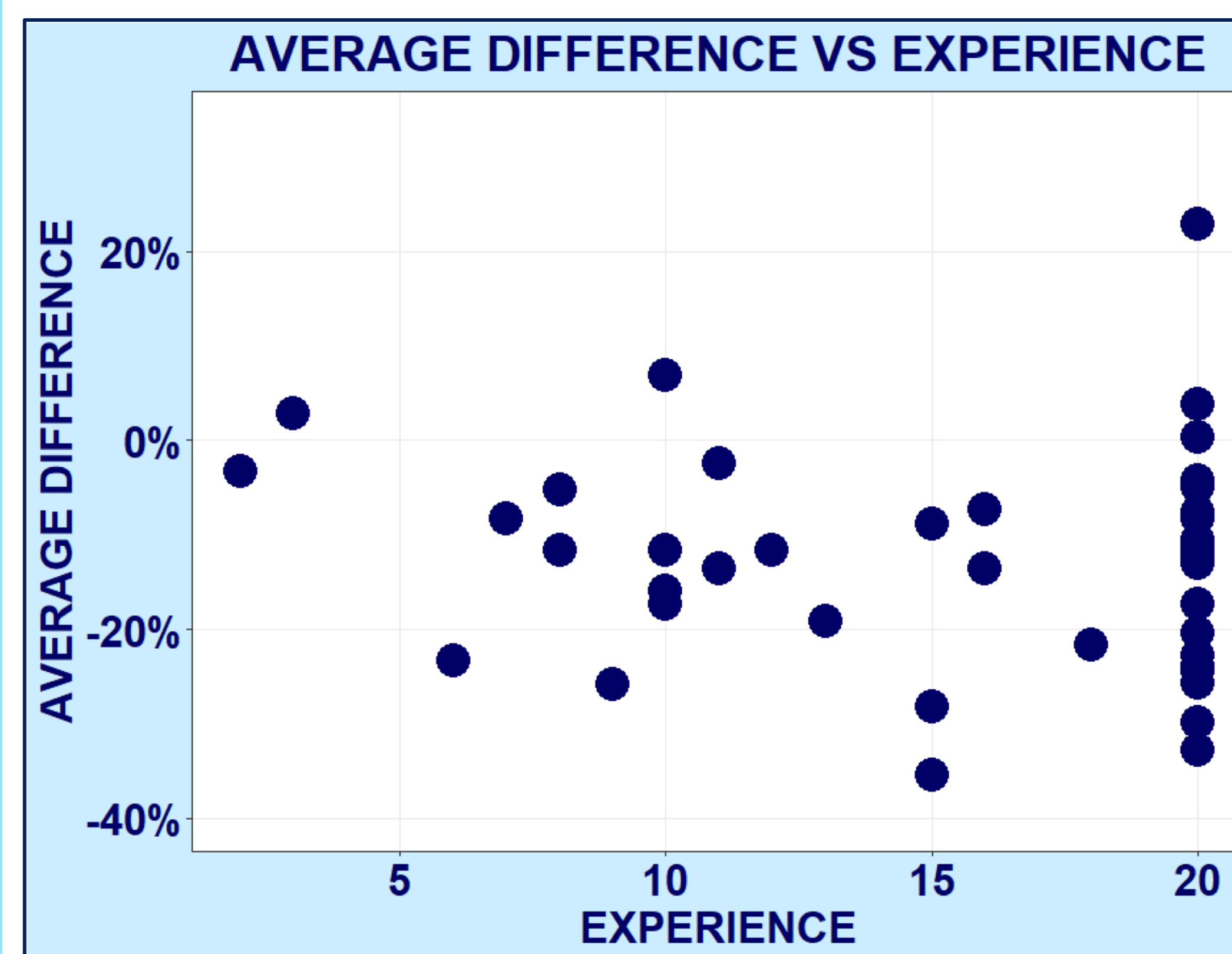


- Graphed year-long analysis of average Billable and Planned hours per month.
- Billable hours show seasonal trends, fluctuating above or below the target.
- Planned hours consistently fall short of the target.

In-depth Class Analysis

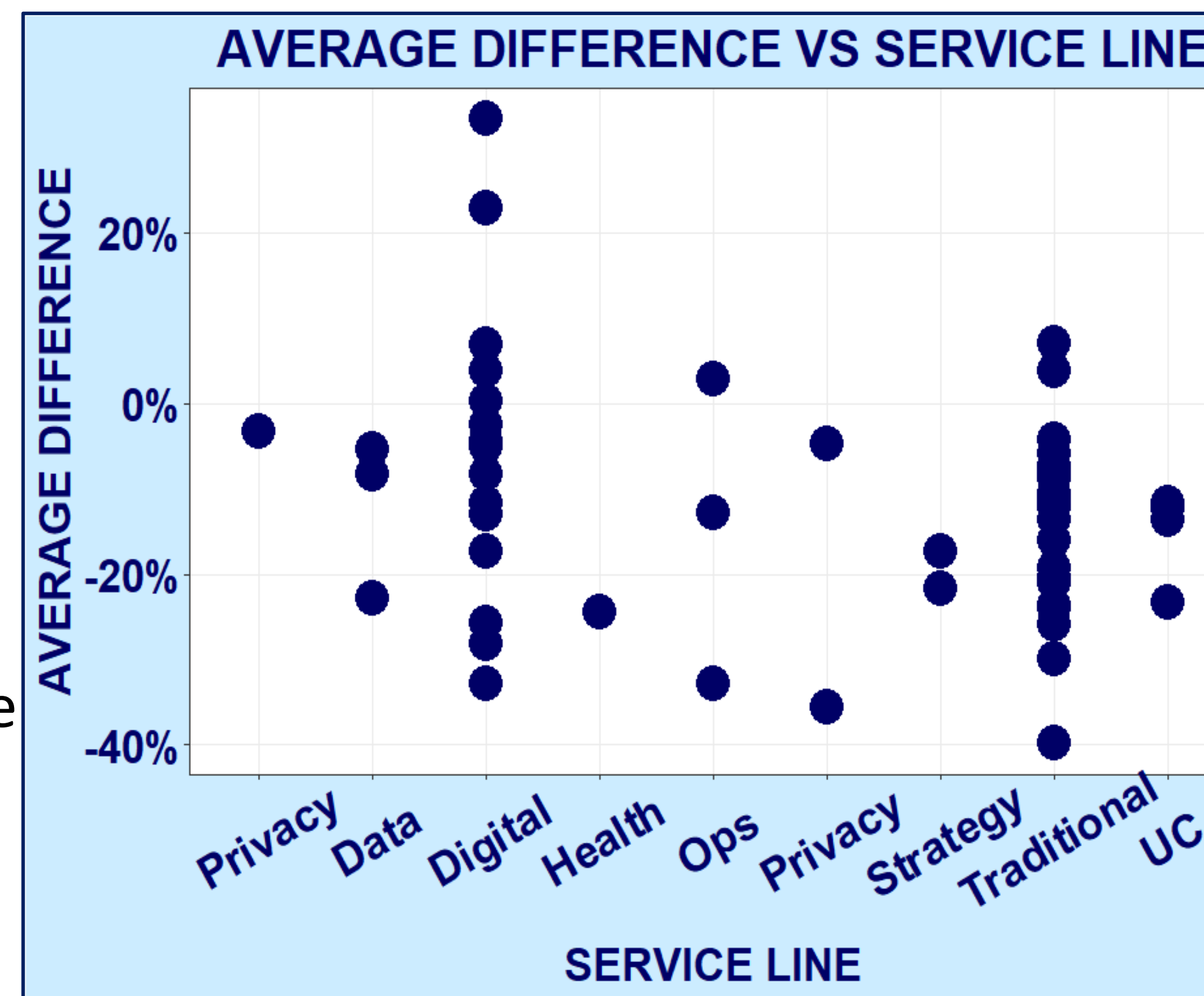
Class 1	Start Date
Class 2	Number of Projects
Class 3	Employee Position
Class 4	Service Line
Class 5	Relevant Experience
Class 6	Vacation
Class 7	Planned

The significance of Digital and Traditional Service Lines on Utilization varies, with the majority of their data points falling below 0%.



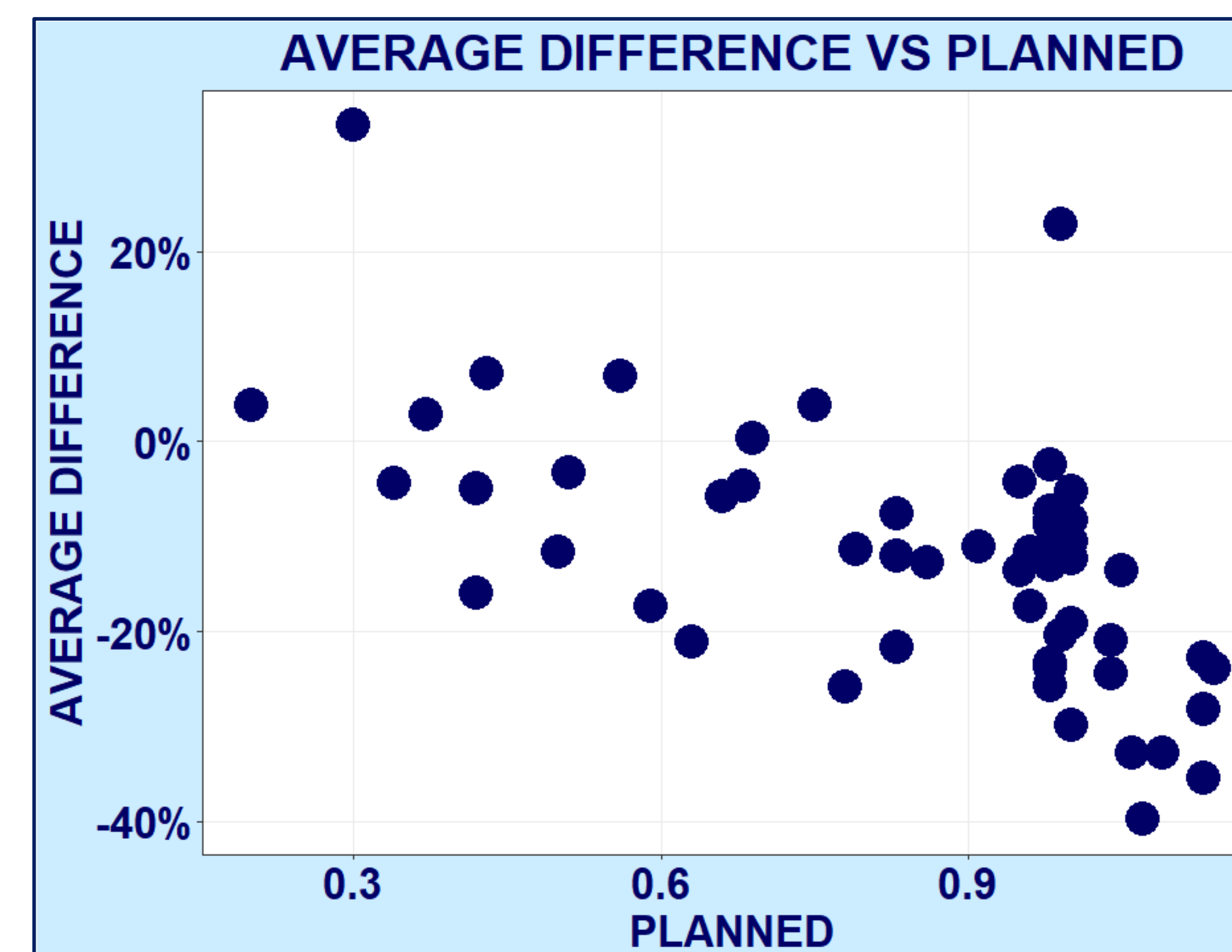
Two Predictors	R ² Value
Class 1 & 4	0.23
Class 1 & 5	0.53
Class 1 & 7	0.36
Class 2 & 5	0.53
Class 2 & 7	0.44
Class 4 & 5	0.55
Class 4 & 7	0.45
Class 5 & 7	0.62

Three Predictors	R ² Value
Class 2, 4, 5	0.57
Class 2, 4, 7	0.51
Class 2, 5, 7	0.67
Class 4, 5, 7	0.68



One Predictor	R ² Value
Class 1	0.12
Class 2	0.11
Class 3	0.02
Class 4	0.13
Class 5	0.49
Class 6	0.00
Class 7	0.33

Most Experience data points indicate 20 years, with an apparent downward trend in Utilization as Experience increases.



Similarly, most Planned data points indicate 90%, with an apparent downward trend in Utilization as Planned increases.

Results

- R^2 is a value from 0 to 1.
- Using one predictor, Relevant Experience had the highest R^2 at 0.49.
- Using two predictors, Service Line and Relevant Experience had the highest R^2 at 0.62.
- Using three predictors, Service Line, Relevant Experience and Planned had the highest R^2 at 0.68.
- R^2 values increase with the number of predictors.
- Maximum three predictors for a realistic approach.

Recommendations

- Our team recommends:
 - Training sessions
 - Question & Answer Sessions from top performing employees.
 - SOPs
 - Predict employee utilization using Experience, Service Line, and Planned
- Future work recommendations:
 - Improve Data Quality
 - Collect more information to study this further