

Workplace Flexibility: Equally productive, no matter where we are.

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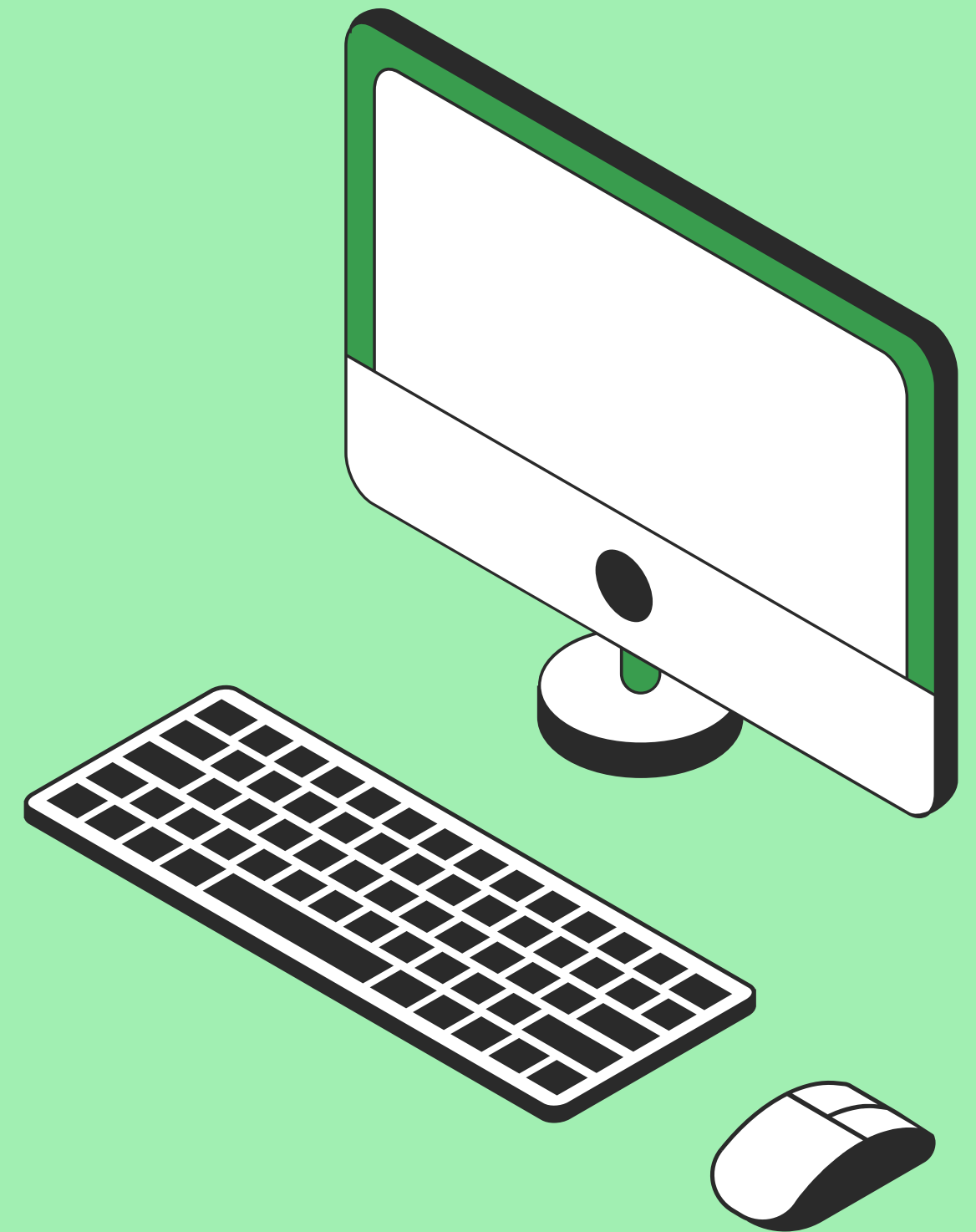
Project Overview

Topic

Productivity differences across hybrid, remote, and in-office work environments.

Why we choose this topic?

We chose this topic because it is highly relevant in today's corporate landscape. Many companies advocate for a return to the office, suggesting that remote or hybrid work may reduce productivity or engagement levels. By analyzing actual data, we aim to objectively determine if these assumptions hold true or if remote and hybrid work can indeed sustain productivity and commitment levels comparable to traditional office settings.



Project Overview

Original Dataset

The original dataset we found was relatively clean and well-organized. However, we needed to standardize, filter, and merge certain columns to maximize the dataset's utility and extract the necessary information for our analysis.

Hypothesis

Employees working in hybrid environments will demonstrate higher productivity levels compared to those in fully remote or in-office setups. The flexibility of hybrid work may allow for better work-life balance, which in turn enhances focus and efficiency, while maintaining sufficient in-person collaboration to support teamwork and engagement.

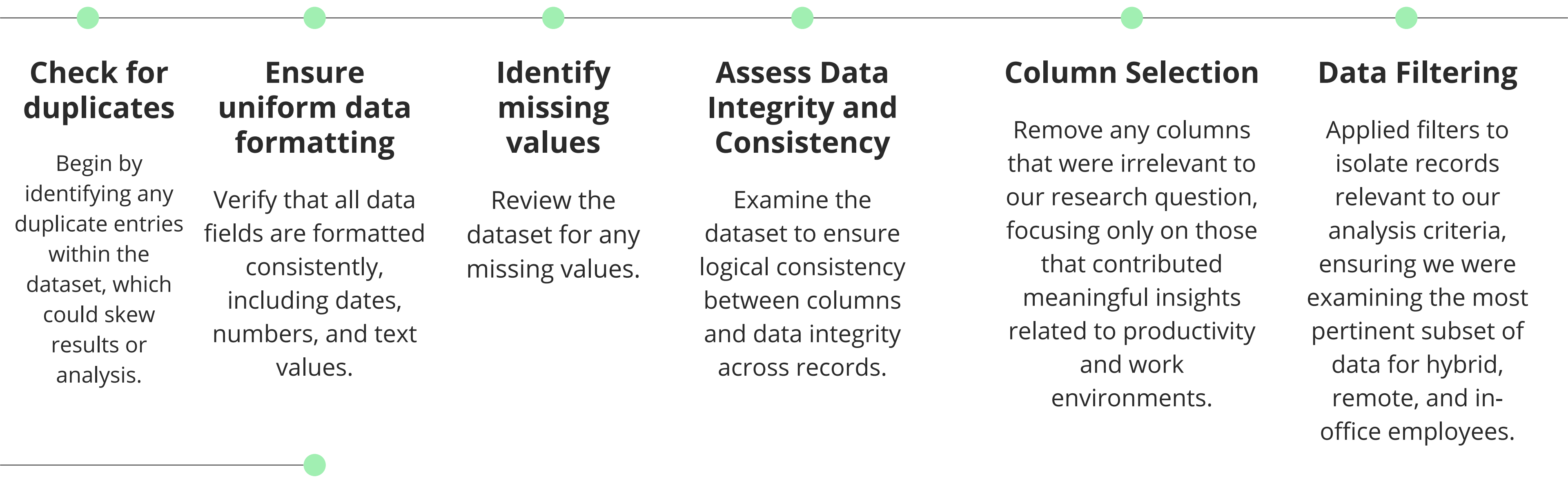


Questions

- Does employee satisfaction differ significantly across remote, hybrid, and onsite work environments?
- Are flexible work hours associated with higher productivity, especially in remote and hybrid setups?
- How are the number of online meetings related to stress levels and work-life-balance?
- Team dynamic & work environment related to overall work satisfaction?
- Is there a measurable link between career growth opportunities and motivation among the remote work environment?



Data Cleaning process



Check for duplicates

Begin by identifying any duplicate entries within the dataset, which could skew results or analysis.

Ensure uniform data formatting

Verify that all data fields are formatted consistently, including dates, numbers, and text values.

Identify missing values

Review the dataset for any missing values.

Assess Data Integrity and Consistency

Examine the dataset to ensure logical consistency between columns and data integrity across records.

Column Selection

Remove any columns that were irrelevant to our research question, focusing only on those that contributed meaningful insights related to productivity and work environments.

Data Filtering

Applied filters to isolate records relevant to our analysis criteria, ensuring we were examining the most pertinent subset of data for hybrid, remote, and in-office employees.

Standardizing Formats

Ensured consistency in data formats across fields, particularly for date and categorical variables, allowing for more accurate grouping and analysis.

Data Wrangling and Cleaning

Challenges Faced in Data Cleaning Process

- Columns:
 - Added calculated motivation score.
 - Added categorical scores (high, medium, low) to replace numerical values.
 - Standardized column names to ensure consistent insights.
- Key variables: employee satisfaction score, promotion, and training hours.
- Outcome variables: motivation, performance score, and growth and development opportunities.



Data Wrangling and Cleaning

How do we use APIs and web scraping to collect and enrich our dataset?

For this project, it was not necessary to use APIs or web scraping techniques to enrich the dataset, as all relevant data was obtained from Kaggle and imported directly into Jupyter Lab for analysis in notebooks. The dataset contained the required information, so we focused on data enrichment through processing and cleaning directly in Jupyter.



Exploratory Data Analysis

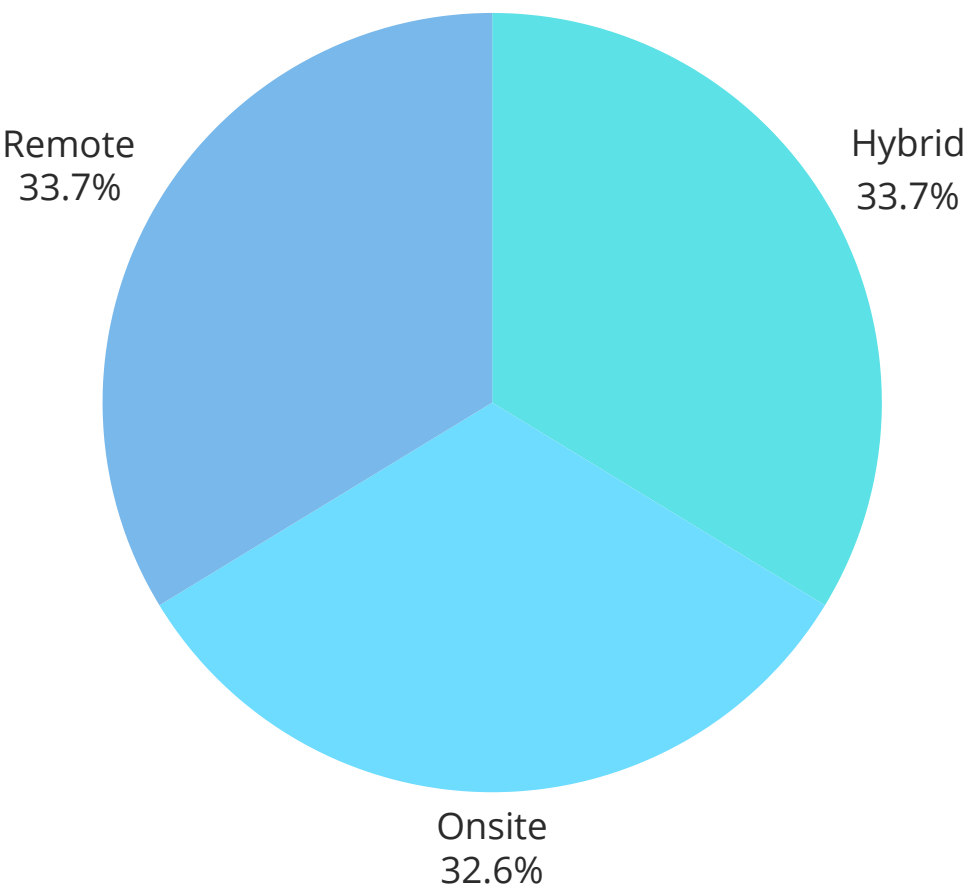
Methods used

- 1. Summary statistics.
- 2. Visualizations.
- 3. Finding correlations and relationships between variables.

Insights

Contrary to initial expectations, we anticipated seeing more pronounced differences in productivity across work styles (remote, hybrid, and onsite). However, our analysis revealed that productivity levels are remarkably consistent across these work settings, suggesting that flexibility in work environment does not negatively impact employee performance. This finding supports the viability of remote and hybrid work models as effective options without sacrificing productivity.

Additionally, although our data showed minimal variation across work types, our results are supported by reputable studies in the field, further validating that employees maintain comparable productivity levels regardless of their work setting.



	Performance Score	Employee Satisfaction Score	Motivation Score
Remote	3.00	3.02	3.00
Hybrid	3.01	3.00	3.00
Onsite	2.97	3.00	2.00

Exploratory Data Analysis

"Companies that let their workers decide where and when to do their jobs—whether in another city or in the middle of the night—increase employee productivity, reduce turnover, and lower organizational costs."

World Economic Forum

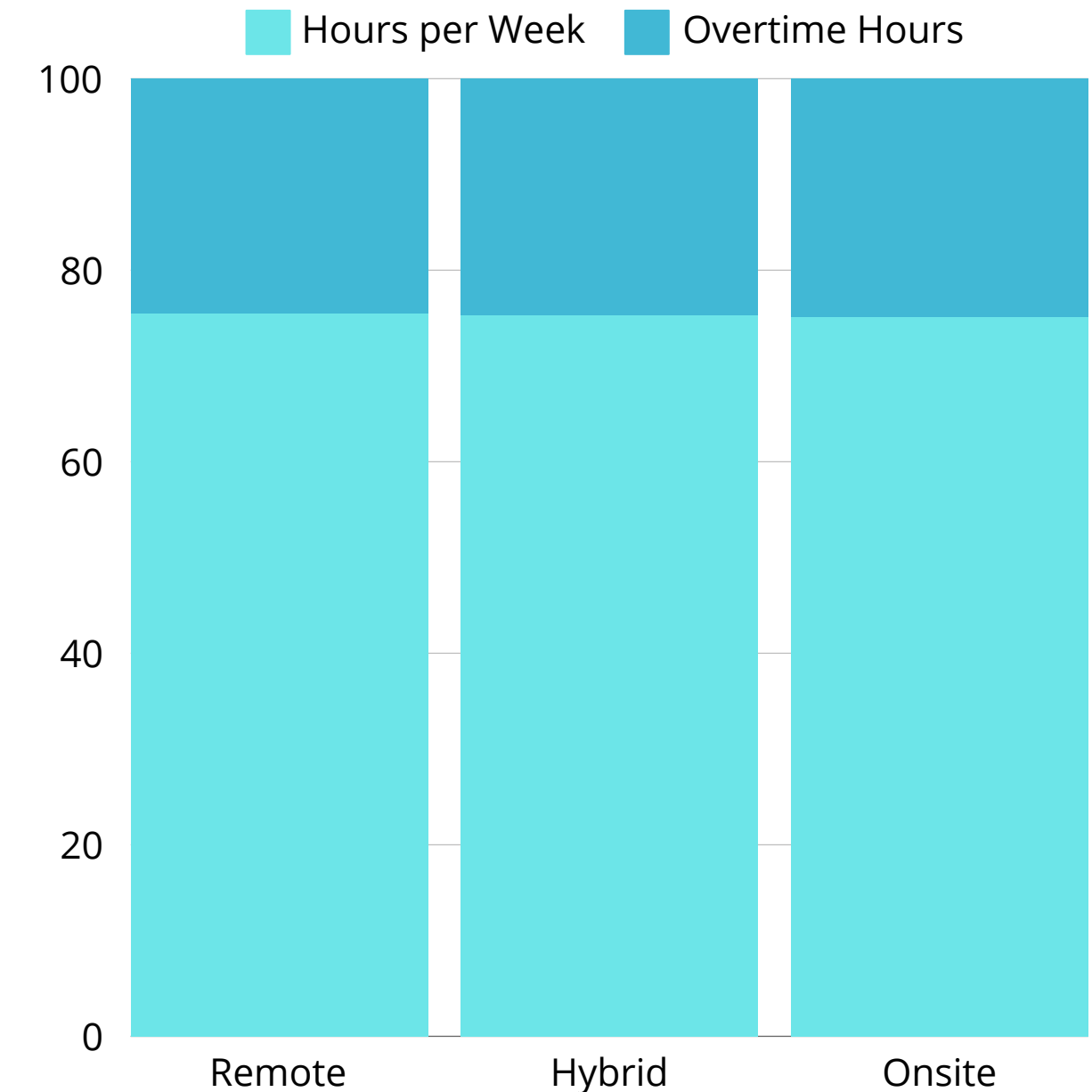
"To be truly engaged and productive, your employees must thrive in both their work and their life. Organizations that help employees find their version of balance, prioritize their feelings of being cared for, and ensure managers are actually equipped to lead remote and hybrid teams have a good chance of improving both well-being and productivity in our new era of work."

Harvard Business Review

Exploratory Data Analysis

Insights

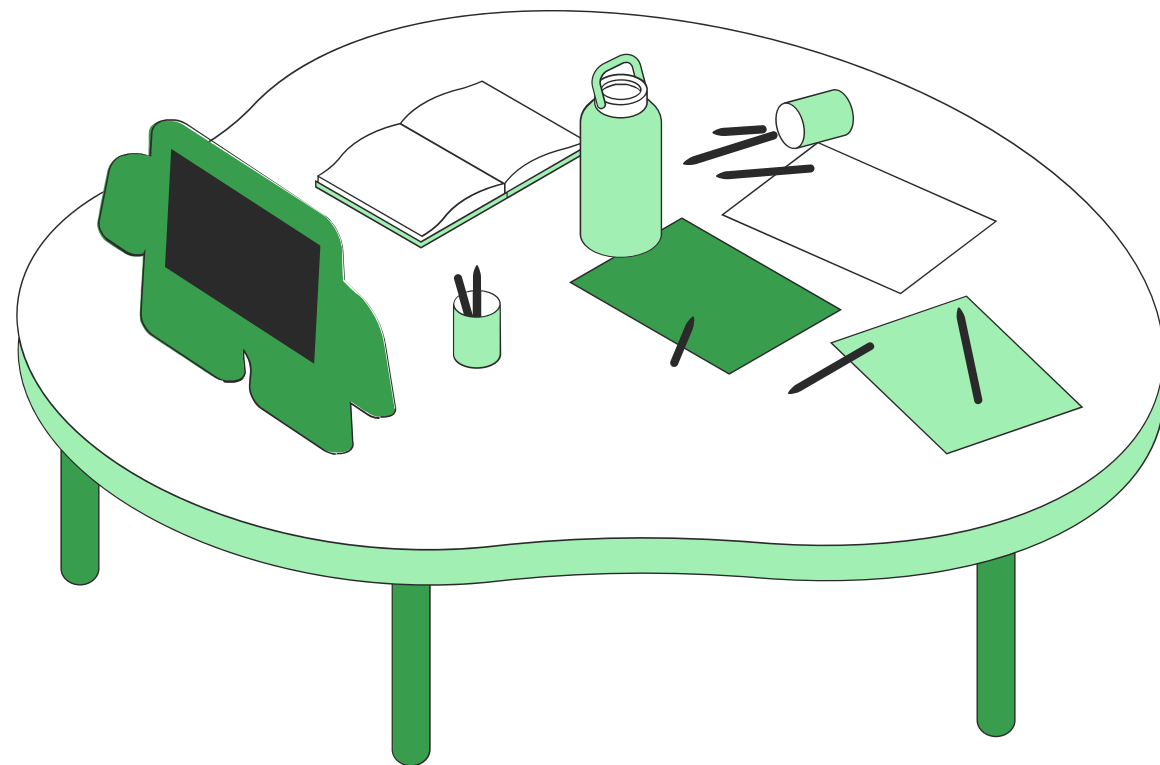
- **Performance Metrics:** Minimal differences in performance scores and productivity metrics across work styles indicate that remote, hybrid, and in-office environments do not impact productivity.
- **Salary and Workload Consistency:** Monthly salaries and weekly work hours are consistent across work types, supporting equal pay and balanced workloads, which suggests similar productivity potential in all models.
- **Health and Attendance Stability:** Sick days are stable across work styles, implying that remote, hybrid, and in-office settings have no effect on health or attendance, indicating well-being stability regardless of work environment.



Teamwork & Project Management

Workflow plan

- When we realized that the data we obtained was evenly distributed, we looked for other data that could complement it. However, this other data continued to give us similar results.



What worked well in your teamwork?

- Structured the tasks for the day.
- Task division.
- Documenting the process each day.

What could be improved in your teamwork?

One area for improvement in our teamwork would be to enhance the team's technical skills. The lack of technical knowledge sometimes caused delays in task completion, which affected the overall workflow.

Major obstacle

Biggest obstacle encountered during the project

- Encountered synthetic data during our analysis.
- Limited access to real-world event datasets.

Learnings

It is essential to evaluate data variability and authenticity early on. This proactive check would allow us to identify potential issues sooner and ensure the integrity of our analysis from the outset.



Insights & Conclusions

Initial hypothesis ¿Supported or Refuted?

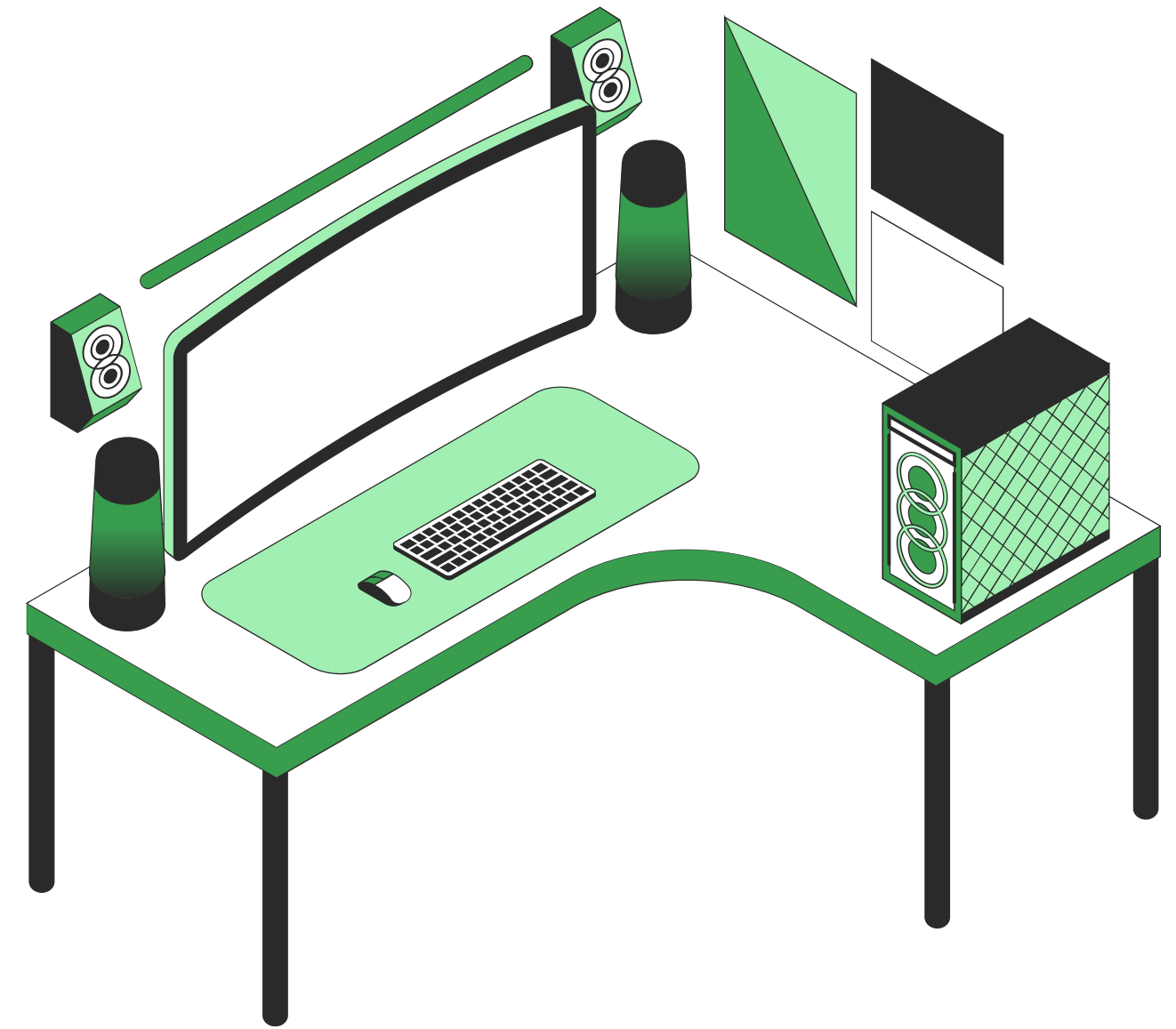
Our initial hypothesis was refuted, as the data ultimately showed that work style (remote, hybrid, or onsite) does not significantly impact employee productivity, job satisfaction and motivation.

Main learnings

Evaluate nature and purpose of the dataset.
Finding information that back-up our investigation.

Surprising insights or findings

We were surprised to find that, according to the data, neither salary nor workload appear to influence productivity levels among employees.



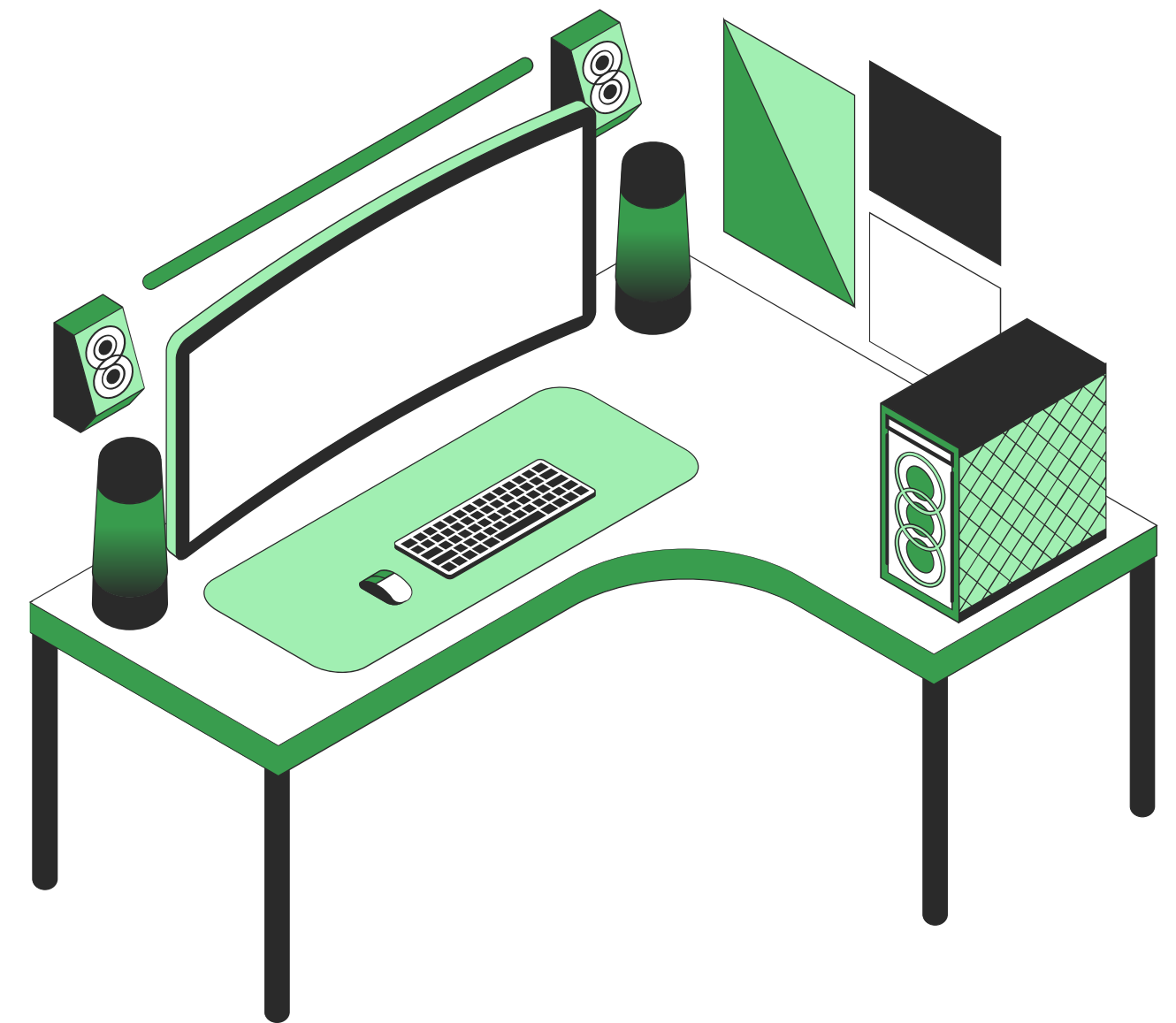
Insights & Conclusions

Potential implications of our findings

Our findings suggest that flexibility in work style (remote, hybrid, or onsite) does not negatively impact productivity. This insight could support companies to focus on factors, such as job satisfaction and work-life balance, to enhance employee engagement and performance.

Questions we couldn't answer

We couldn't determine the impact of factors like team dynamics, individual motivation, or specific managerial practices on productivity. Additionally, we lacked data on external variables, such as home office setup or commuting time.



Thank you!

