The Effects of Color and Familiar Visual Context on Chart Comprehension and Memorability

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Motivation

- Visualizations should not include **chart junk** (Chart junk refers to the confusing or unnecessary visual elements in graphs and charts).
- This view has also been supported by psychology lab studies. However, some researchers said, chart junk can possibly improve memorability.
- Can we make a chart where there will be **no chart junk** and, in the meantime, it will be **more memorable** to users?
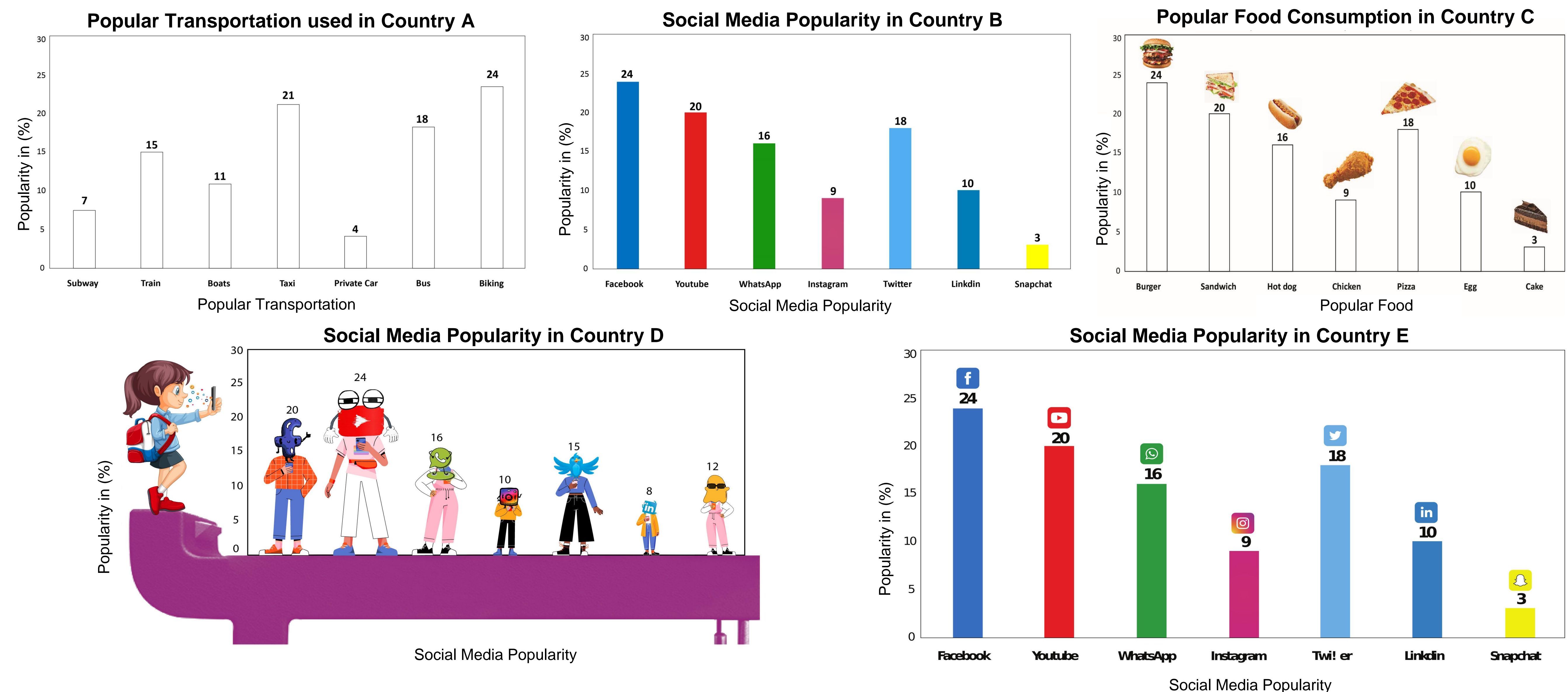
Research Question

- **RQ1:** How can an engaging, more memorable chart be developed without the need for **chart junk**?
- **RQ2:** How does a combination of **color** with **recognizable visual context** offer a better chart understanding and improved user perception?
- **RQ3:** Are **color** and **context** an effective replacement to eliminate chart junk and contribute to the user's memory?
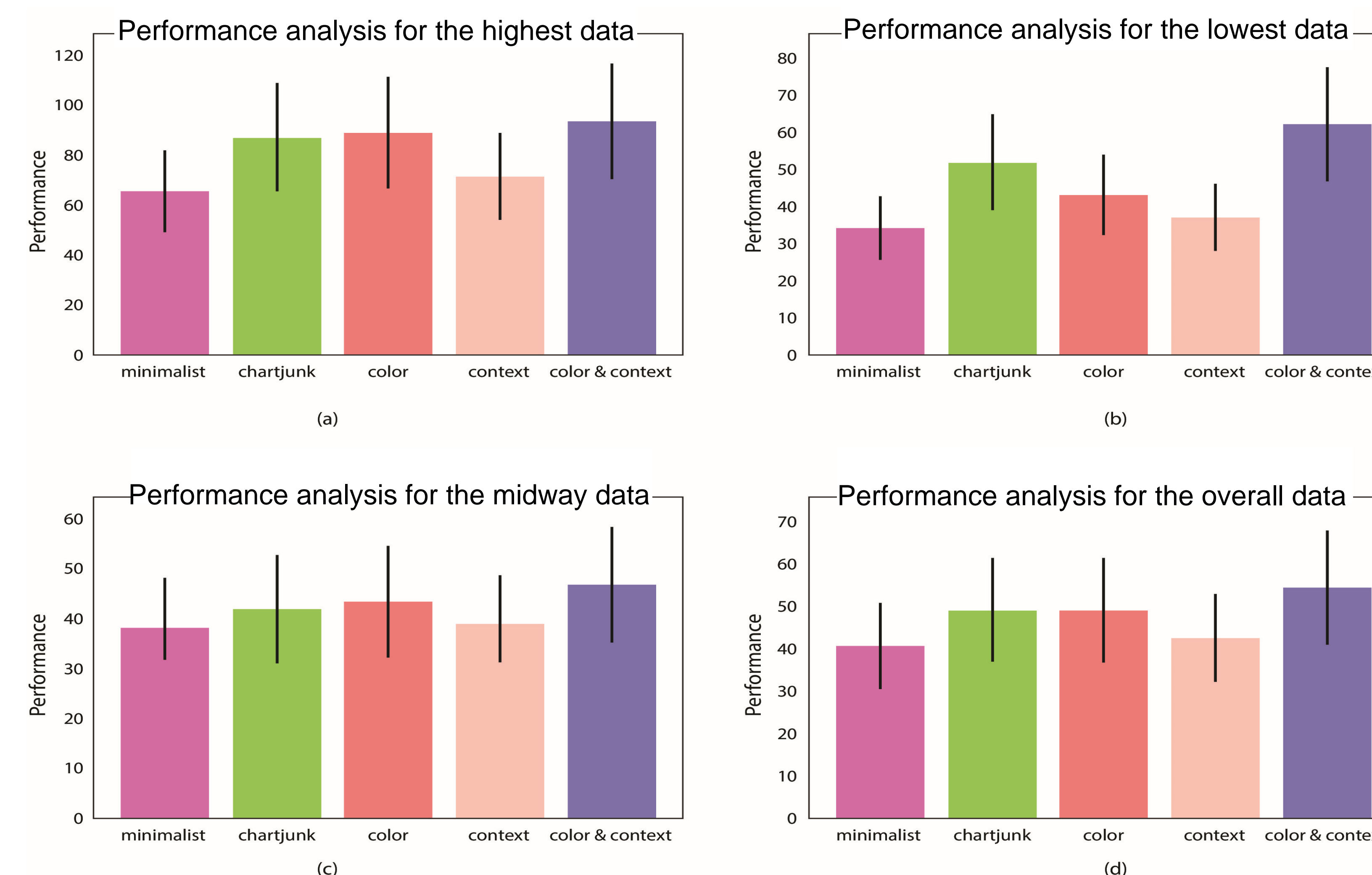
Key Contribution

→ Conducted a user study with five different types of charts—minimalist, chart junk, colored, context, and a chart with color and context— to discover the memorability performance of the user.

→ Analyzed the visually embellished chart to identify the essential element that significantly contributes to memorability.

→ Evaluated the memorability performance of different types of charts to generate a memorable chart without chartjunk.

→ Examined different aspects of a chart to see if the charts can actually be made more memorable.

Experiment Set-up

Experiment Results

(a) Performance analysis for the highest data

(b) Performance analysis for the lowest data

(c) Performance analysis for the midway data

(d) Performance analysis for the overall data

Overall Findings

- The most important factor to influence a user's memory is **color**, which may be employed in the chart to make the representation more interesting and memorable.
- The use of **color** in conjunction with a **recognizable visual feature** may facilitate chart understanding and may affect the user's perception.
- to create a better chart, adding **color with context** can help to eliminate graphical cartoons and embellishments that are unnecessary.