How to interpret stacked bar chart with dual axis over time

Global Digital Leisure Spend
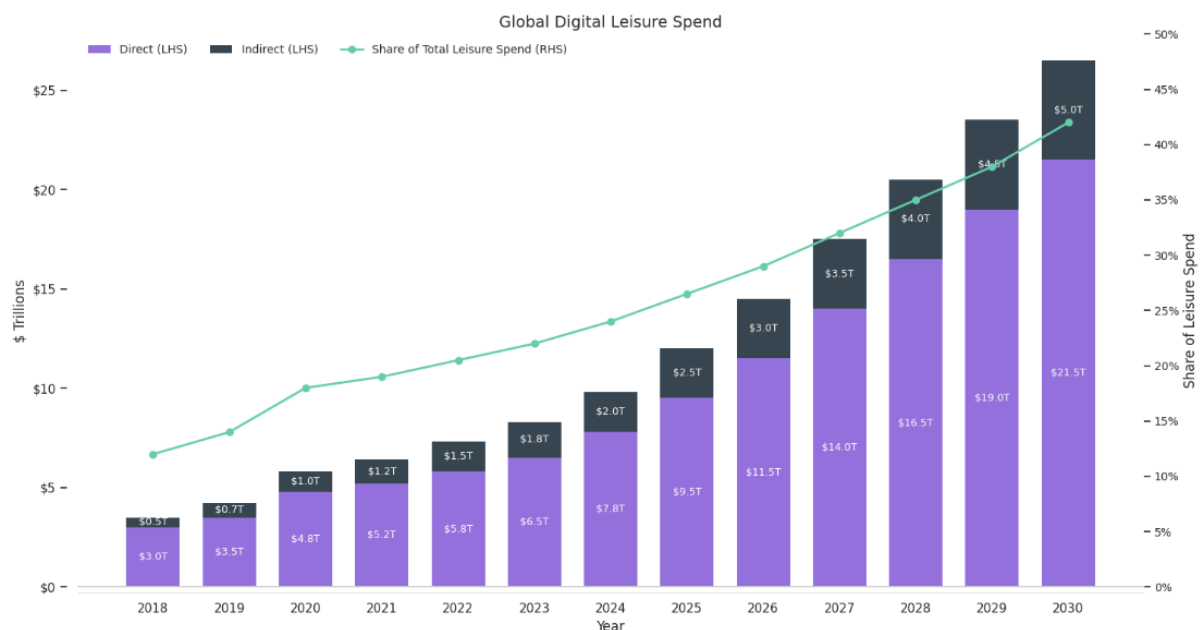
A. Understanding the Components of a Stacked Bar Chart with Dual Axis Over Time:

- **Horizontal Axis (X-axis):** Represents "Year," showing the progression of time from 2018 to 2030.
- **Left Vertical Axis (LHS):** Represents the "Global Digital Leisure Spend" in Trillions of dollars ($T). The stacked bars are plotted against this axis.
- **Right Vertical Axis (RHS):** Represents the "Share of Total Leisure Spend" as a percentage (%). The line chart is plotted against this axis.
- **Stacked Bars:** For each "Year," there is a single bar stacked with two components:

  - **Purple Segment:** Represents "Direct" digital leisure spend.

  - **Dark Gray Segment:** Represents "Indirect" digital leisure spend.

  - The total height of the bar represents the total global digital leisure spend (Direct + Indirect) for that year.

- **Line Chart:** A light green line with markers represents the "Share of Total Leisure Spend" over time. The values for this line are read from the right vertical axis.
- **Labels:** Values are shown on top of the stacked bars indicating the total digital leisure spend for that year.
- **Legend:** The legend at the top clarifies which color corresponds to "Direct" spend, "Indirect" spend, and which line represents the "Share of Total Leisure Spend."

B. Interpreting the Global Digital Leisure Spend Over Time:

By examining the stacked bars and the line chart, we can understand the trends in both the absolute amount and the share of digital leisure spend:

- **Total Digital Leisure Spend (Stacked Bars):** The total height of the stacked bars shows a clear upward trend in global digital leisure spend from 2018 to 2030. The spend is projected to increase significantly over this period, reaching $26.5 Trillion by 2030.
- **Direct vs. Indirect Spend:**

  - **Direct Spend (Purple):** Forms the larger portion of the total digital leisure spend and shows a consistent and substantial growth trend over the years.

  - **Indirect Spend (Dark Gray):** Represents a smaller but also growing portion of the total digital leisure spend. The ratio of indirect to direct spend appears relatively consistent over time, with direct spend being significantly higher.

- **Share of Total Leisure Spend (Light Green Line):** The line chart plotted against the right axis shows the percentage of total global leisure spend that is attributed to digital leisure. This share also exhibits a strong upward trend, starting at around 12% in 2018 and projected to reach approximately 45% by 2030. This indicates that digital leisure is becoming an increasingly significant part of the overall leisure economy.

C. Overall Interpretation:

The stacked bar chart with a dual axis effectively visualizes two related but distinct trends in global digital leisure spend over time. The absolute amount of digital leisure spend, broken down into direct and indirect components, is projected to grow substantially. Simultaneously, the share of digital leisure within the total leisure economy is also expected to increase dramatically, highlighting the growing importance and market penetration of digital leisure activities.

This type of chart is particularly useful when you want to:

- Show the composition of a total (stacked bars) and relate it to a different metric (line chart) that shares the same time axis. This allows for the visualization of potential correlations or diverging trends between the total amount and its relative share.
- Display two different scales of data on the same chart without one overwhelming the other. The dual axes allow for the clear representation of values with significantly different magnitudes (Trillions of dollars vs. percentages).
- Analyze how a part of a whole (e.g., direct/indirect spend) contributes to the total and how that total relates to another relevant metric (e.g., market share).
- Highlight trends and relationships between different aspects of the data over time in a single view. The increasing absolute spend and the increasing market share are clearly shown together.
- Present a comprehensive overview of related time-series data with different units or scales.

Considerations:

- Interpretation can be slightly more complex than a single-axis chart, requiring the user to pay attention to both vertical scales. Clear labeling and a well-designed legend are crucial.
- Correlation implied by the visual proximity of the line and bars might not always indicate a direct causal relationship.

In summary, a stacked bar chart with a dual axis over time is a powerful tool for visualizing multivariate time-series data where you need to show both the

composition of a total and its relationship to another relevant metric with a different scale. It allows for a richer understanding of the dynamics and trends within the data.