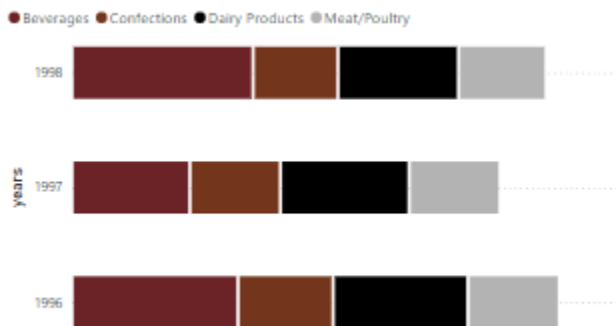


## 2. Stacked Bar Chart

A **stacked bar chart** is a type of bar chart where each bar is divided into segments that represent sub-categories of the main category. Each segment is "**stacked**" on top of the previous one, so the full length of the bar represents the **total** of all sub-categories.



### Great for visualizing:

- Part-to-whole relationships
- Sub-category comparison across groups
- Trends in categories with composition

### When to Use a Stacked Bar Chart

Use a stacked bar chart when you want to:

- Compare **totals** across categories
- Show how **parts contribute** to the whole
- Track changes in composition over time
- Represent **multiple variables** within the same category

## Examples:

- Sales by region and product category
- Survey responses broken down by age group
- Website visits by traffic source over several months

## Advantages

- ✓ Shows overall totals and individual group breakdowns
- ✓ Space-efficient (more compact than grouped bars)
- ✓ Helps spot patterns in how sub-categories vary

## Limitations

- ✗ Harder to compare individual segments, especially those not at the base
- ✗ Can become cluttered with too many sub-categories
- ✗ Not ideal for highlighting small differences in inner segments

## Structure of a Stacked Bar Chart

- **X-axis:** Categories (e.g., Months, Regions, Departments)
- **Y-axis:** Numeric values (e.g., Revenue, Units, Votes)
- **Bars:** Each bar represents one main category
- **Stacks:** Each segment within the bar represents a sub-category
- **Legend:** Explains which color corresponds to which sub-category

## Design Tips

- Limit stacks to 3–5 categories for clarity
- Use a **legend or color labels** for segment identification
- Sort bars to highlight trends
- Use tooltips or data labels for precise values
- Choose **distinct colors** with good contrast

## When NOT to Use Stacked Bar Charts

- When comparing **exact values** of sub-categories
- When you have **too many segments** (over 5–6)
- When the focus is on **trend over time for each sub-category** → use a **line chart** instead