We can design a contingency table to analyze the relationship between product categories (Furniture, Office Supplies, Technology) and customer segments (Corporate, Consumer, Home Office). Here's how we can structure this:

Contingency Table Structure

The table will have product categories as rows and customer segments as columns. Each cell in the table will represent the observed frequency of purchases for a specific combination of product category and customer segment.

Contingency Table

	Corporate	**Consumer**	**Home Office**	**Total**
Furniture	30	50	20	100
Office Supplies	40	60	30	130
Technology	50	70	40	160
Total	120	180	90	390

Breakdown of the Table

- **Rows**: Each row represents a product category (Furniture, Office Supplies, Technology).
- **Columns**: Each column represents a customer segment (Corporate, Consumer, Home Office).
- **Cells**: Each cell shows the number of transactions (observed frequency) for that product category and customer segment combination.
- **Totals**: The last row and column show the total frequency for each product category and customer segment, respectively.

Hypothetical Data Interpretation

In the above example:

- **Furniture**: There were 30 transactions from the Corporate segment, 50 from the Consumer segment, and 20 from the Home Office segment.
- **Total for Furniture**: 100 transactions were made in total for Furniture across all segments.
- **Office Supplies**: 40 transactions were made by the Corporate segment, 60 by the Consumer segment, and 30 by the Home Office segment, totaling 130.
- **Technology**: 50 Corporate, 70 Consumer, and 40 Home Office, totaling 160.

Next Steps

1. **Conduct Chi-squared Test**: You can use this contingency table to perform the Chi-squared test to determine if there is a significant association between the product categories and customer segments.
2. **Check Assumptions**: Ensure that the expected frequency for each cell is at least 5 for the results to be reliable.
3. **Data Collection**: If you have real data, replace the example frequencies with the actual counts from your dataset.

This table setup provides a clear way to analyze customer preferences across different product categories and segments.