**Assignment Objectives**

Your task is to analyze the provided dataset to gain insights into bank customer behavior and the factors that contribute to customer churn. You will use Pivot Tables for your analysis.

**Analytical Questions**

Please address the following analytical questions using **Pivot Tables** in Excel:

1. What is the average credit score for each geography?

|  |  |
| --- | --- |
| **Country** | **Average of Credit Score** |
| France | 593 |
| Germany | 580 |
| Spain | 601 |

1. How does the average account balance vary between genders within each country?

|  |  |
| --- | --- |
| **Age Group** | **Average of Balance** |
| 18-22 | 1,03,533 |
| 23-27 | 1,23,815 |
| 28-32 | 1,37,426 |
| 33-37 | 1,37,983 |
| 38-42 | 1,28,030 |
| 43-47 | 1,24,409 |
| 48-52 | 1,36,780 |
| 53-57 | 1,34,505 |
| 58-62 | 1,14,969 |
| 63-67 | 1,37,126 |
| 68-72 | 1,08,169 |
| 73-77 | 1,05,229 |
| 78-82 | 1,39,163 |
| 83-87 | 1,42,706 |
| 88-92 | 1,55,882 |

1. What is the distribution of active members versus non-active members according to having credit card?

|  |  |
| --- | --- |
| **Active Member** | **Has CreditCard** |
| Inactive | 123 |
| Active | 124 |
| **Grand Total** | **247** |

1. What is the customer churn rate per number of products used?

|  |  |
| --- | --- |
| **Churn Rate** | **54%** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Num Of Products** | **Count of Customer** | **Sum of Churn** | **Churn Rate / Prod Used** |
| 1 | 125 | 69 | 55% |
| 2 | 135 | 74 | 55% |
| 3 | 118 | 65 | 55% |
| 4 | 122 | 64 | 52% |
| **Grand Total** | **500** | **272** | 54% |

1. What is the average credit score for customers who have exited compared to those who have stayed, across different tenure?

|  |  |
| --- | --- |
| **Customers** | **Average of Credit Score** |
| Stayed | 596 |
| Leave | 588 |

Please address the following research questions using **Data Analysis ToolPak** in Excel:

1. Is there any significant difference in customers' average earning between churned and not-churned?
2. Is there any significant difference in customers' average credit scores among customers' geographic location?

**Instructions**

* Deal with missing values in "EstimatedSalary" and inconsistent value in "Balance" variables.
* Use average value to replace any missing value or inconsistent data within the variables.
* Complete your analysis for the first 5 questions using Pivot Tables in Excel based on the provided dataset.
* For each analytical question, create a separate Pivot Table and include a brief summary of your findings.
* Complete your analysis for the last 2 questions using Data Analysis ToolPak in Excel based on the provided dataset. Significance level = 0.05. No need to test any assumptions.
* For each research question, create a separate worksheet and include a brief summary of your findings.

Good luck, and make sure to leverage the full potential of Excel to uncover valuable insights from the dataset!

**Questions for this assignment**

1. How many missing values are in the "EstimatedSalary" variable?

**3**

1. What is the average balance excluding the inconsistent value?

**1,28,389**

1. What is the average credit score of the customers from Germany?

**580**

1. What is the average bank balance of the male customers from France?

**1,33,205**

1. How many of the customers got churned among the customers who have a credit card?

**131**

1. How many of the customers stayed among the customers who have used 3 products?

**53**

1. What is the average credit score for a churned customer who have a tenure of 1 year?

**617**

1. What is the average salary of churned customers?

**85,503**

1. What is the conclusion for the research question 1?
2. What is the conclusion for the research question 2?