**Public Health Awareness**

**Project Objective**: The project aims to evaluate the effectiveness of public health awareness campaigns by analyzing campaign data. By measuring audience reach, awareness levels, and campaign impact, we intend to provide actionable insights that will inform the development of future public health strategies. This project will involve defining analysis objectives, collecting campaign data, designing informative visualizations using IBM Cognos, and incorporating code for data analysis.

**Problem Understanding**

**Problem Statement:**

The challenge is to assess the impact of public health awareness campaigns accurately. To do this, we need to measure how effectively these campaigns reach their target audience and increase awareness. Traditional methods often lack precision and may not provide actionable insights for campaign improvement.

**Key Aspects to Understand:**

* **Campaign Objectives:** Understanding the specific goals of each campaign, such as increasing vaccination rates, promoting healthy behaviors, or raising awareness about a particular health issue.
* **Data Sources:** Identifying the sources of campaign data, which may include social media platforms, websites, email campaigns, and awareness surveys. Each source may provide different types of data.
* **Audience Demographics:** Analyzing the demographics of the campaign's audience to ensure it aligns with the intended target group.
* **Engagement Metrics:** Measuring engagement metrics like clicks, likes, shares, comments, and views to gauge audience interaction with campaign content.
* **Awareness Surveys:** Conducting awareness surveys to assess changes in public awareness and knowledge before and after the campaign.
* **Effectiveness Metrics:** Determining which metrics will be used to quantify campaign effectiveness, such as conversion rates, changes in awareness levels, or ROI**.**

**Solution Approach**

**Analysis Objectives:**

* **Measuring Audience Reach:** Calculate the reach of each campaign by analyzing website traffic, social media engagement, and other relevant metrics.
* **Assessing Awareness Levels:** Evaluate changes in awareness levels among the target audience by comparing survey responses before and after the campaign.
* **Evaluating Campaign Impact:** Quantify the campaign's impact on public health outcomes, such as vaccination rates or adoption of healthier behaviors.

**Data Collection:**

* Data Sources: Utilize various data sources, including but not limited to:
* Website analytics data (e.g., Google Analytics)
* Social media data (e.g., Face book Insights, Twitter Analytics)
* Email campaign data
* Awareness surveys conducted before and after the campaign
* Data Collection Methods: Employ appropriate methods for collecting data from these sources, such as API integrations, web scraping, and survey tools.
* Audience Demographics: Collect and analyze demographic data to ensure campaigns are reaching the intended audience. This information can be obtained from survey responses, social media insights, and website analytics.

**Visualization Strategy:**

* **Tool Selection:** Utilize IBM Cognos for creating informative dashboards and reports due to its robust data visualization capabilities.
* **Dashboard Components:** Design dashboards with key components like charts, tables, and interactive elements to visually represent campaign performance, audience reach, and awareness levels.
* **User-Centric Design:** Ensure that the visualizations are user-friendly, intuitive, and cater to the needs of different stakeholders, including campaign managers, public health officials, and data analysts.

**Code Integration:**

* **Data Cleaning:** Employ code for data cleaning to ensure data quality and consistency. Address missing values, outliers, and data format issues.
* **Data Transformation:** Use code to transform raw data into a format suitable for analysis. This may involve aggregating, filtering, and joining datasets.
* **Statistical Analysis:** Implement statistical analysis using code to derive actionable insights from the data. This can include hypothesis testing, regression analysis, and trend analysis.

**Proposed System Design**

**Data Flow:**

* **Data Collection:** Gather campaign data from various sources, including websites, social media platforms, and email campaigns, and surveys.
* **Data Cleaning:** Use code to clean and preprocess the collected data to ensure accuracy and consistency.
* **Data Transformation:** Transform the cleaned data into a structured format suitable for analysis.
* **Statistical Analysis:** Apply statistical analysis techniques to assess campaign impact and changes in awareness levels.
* **Visualization:** Create informative dashboards and reports in IBM Cognos to visually represent the analyzed data.
* Insights and Recommendations: Derive actionable insights from the analysis and provide recommendations for optimizing future health awareness campaigns.

**Assignment Notebook Submission**

The project will be documented in an assignment notebook, which will include the following sections:

* **Data Collection:** Details on data sources, collection methods, and data acquisition.
* **Data Analysis:** Code and methods used for data cleaning, transformation, and statistical analysis.
* **Visualization:** Visualizations and dashboards created using IBM Cognos to present insights.
* **Results and Insights**: Findings from the analysis, including campaign effectiveness, audience reach, and awareness levels.
* **Recommendations:** Actionable recommendations for improving future health awareness campaigns based on the analysis.

**Conclusion:** Summarize the project's outcomes and their alignment with the defined objectives.

By following these phases and tasks, the project aims to provide valuable insights into the effectiveness of health awareness campaigns, enabling informed decision-making and improvements in future health initiatives.

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