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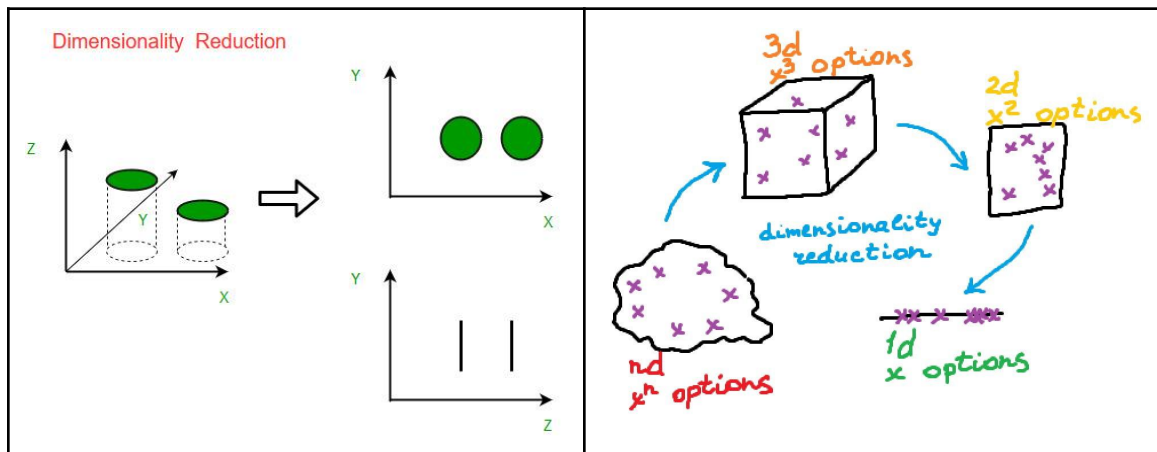
Research Assessment #11 - Data Analytics

Furthering my last research assessment, where I began to research data analytics, I will delve deeper into examples, necessary knowledge, and share insight from another recent interview. As a recap, the last assignment taught me the difference between a data analyst and a data scientist, the required skill set, and daily tasks. Furthermore, I learned the process of obtaining data and what to then do with that data.

Continuing the discussion of the job of data analysts, from the article, I learned a few categories of tools and techniques often used;

- **Regression analysis:** Honestly, the name of the phrase initially threw me off. Last year I took AP Psychology, and we learned that regression is when you go back to old, mostly bad habits. However, this form of analysis is the opposite; it uses data for prediction. The author stresses that they cannot show cause and effect alone. This leads me to believe that data analysis requires using many skills simultaneously to extract meaningful information from the numbers received.
- **Factor Analysis:** This phrase can also be called dimension reduction. Although stated as a synonym, I decided to look up the proper definition of this new buzz

phrase. According to Wikipedia, “dimensionality reduction is the transformation of data from a high-dimensional space, to a low-dimensional space, so that the low-dimensional representation retains some meaningful properties of the original data...”. That can seem quite confusing, so I found these photos helpful.



They are pretty simplified, but I understood factor analysis better by looking up other wording. Looking at these photos, we can tell that the data got condensed into easier, digestible numbers. From a marketing perspective, this is crucial to help uncover and control the number of “underlying variables that drive people’s behavior and the choices they make.”

- **Cohort Analysis:** This form of analysis breaks down the users from an application (so, in my case, my website) and separates them by common behaviors. I know from past interviews that data analysts can look at a user's history through specific software. These marketing professionals can track when users got on the website, where they scrolled, how long they stayed, etc. This type of analysis is important because it allows data analysts to find patterns in user behavior and then test ways to optimize favored actions (like buying a

product). Furthermore, there is a variable of time involved. Through this added window, analysts can see if user engagement goes up or going down. From there, they can troubleshoot and go through AB Testing to find ways to reverse or encourage that behavior.

- **Cluster analysis:** From what I read, this form of analysis is similar to cohort analysis. The difference is that this form is more generic, whereas the former can be used in more specific, targeted ways. The name fits well, as the process of this analysis involves clustering data into more manageable targeted audiences. The rule is, “objects in one cluster must be more similar to each other than they are to objects in another cluster.”. By seeing data distribution through this process, cluster analysis is essential in situations where “there are no existing predefined classes or groupings.
- **Time-series analysis:** This form is straightforward, using the data from specific time periods to find trends and cycles. Looking at data through intervals can help data analysts create more accurate forecasts for the future.

These forms of analysis were specifically defined within the article. However, there was mention of Monte Carlo simulations, dispersion analysis, and text or content analysis. I plan on researching these topics along with more information from the blog in my next research assessment.

CITATION

Stevens, E. (2022, August 16). What is data analytics? A Complete Guide for Beginners. CareerFoundry. Retrieved November 4, 2022, from <https://careerfoundry.com/en/blog/data-analytics/what-is-data-analytics/>

Annotated Article

<https://docs.google.com/document/d/1yOE98NeVH7oN7iqMTSHvIG0gjmJDAXgTDE0AhSnNXLc/edit?usp=sharing>