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**Data Visualization & Interpretation**

**Assignment 1 – PS7 - [CONSTRUCTION DATA ANALYSIS]**

**Contribution Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl. No.** | **Name (as appears in Canvas)** | **ID NO** | **Contribution (%)** |
| **1** | **Shehza Fathima** | **2021c104174** | **100%** |
| **2** | **Nithin Krishnan NU** | **2021c104176** | **100%** |
| **3** | **Binsu Elizabeth Varghese** | **2021c104187** | **100%** |

**Visualization Context:**

1. **KNOW YOUR AUDIENCE (First question is answered for you)**
2. **List the primary groups or individuals to whom you’ll be communicating.**

The Department of Housing and Urban Development

1. **If you had to narrow that to a single person, who would that be?**

The Director of Housing and Urban Development Department

1. **What does your audience care about?**

The housing departments cares for the housing requirements of the American people, specifically in the following areas:

* Sustained community-based development of housing regions for all classes of people especially the minority and low-income people
* Provide fair priced and equal housing for all
* Make quality home affordable to the people
* Be stewards of the taxpayer money
* Strengthen the US housing market
* Insuring mortgages for single family and multifamily homes

1. **What action does your audience need to take?**

From the given data the audience should take the following actions:

* Identify the prospective regions that promote distributed urban development
* Focus on areas with a good return on investments.
* Observe the sales price in different regions and try coming up with plans to promote equal and fair pricing of houses.
* Take a closer look at the variation in price indices within a year.
* Look at the effects of price rise in the housing sector & take actions to curtail it.

1. **What is at stake? What is the benefit if the audience acts in the way you want them to? What are the risks if they don’t?**

At Stake:

* Affordability of single-family and multifamily housing units
* Success of Urban Planning policies

Benefits:

* Balanced development of all regions
* House prices will be consistent and affordable
* Reduced housing discriminations
* Better and justifiable utilization of funds and resources

Risks:

* Biased development of regions
* Uncontrolled price indices may contribute to Inflation
* Urban planning policies will have a decisive influence on the future of disaster risk reduction.
* Poorly planned urban development can harm the environment and create new risks.

1. **WHAT?**

What are you trying to communicate? What questions are you trying to answer/display in your visualizations? Write these as specific questions. You need to come up with 3 questions at least, each of which will be answered using one Viz.

1. How do the price indices vary across the regions of North East, Mid-West, South and West?
2. What is the monthly trend of the deflator price indices of homes under construction? When to put a check on the deflator price index rise?
3. Which are the regions contributing to the higher Sales Price?
4. Are the Sales Prices consistent with the benchmark year 2005?

**Present the BIG IDEA**

The increase in sales price since 2012 for the given quality of houses as compared to that of the benchmark year 2005 can lead to inflation if unchecked and must be controlled by focussing development activities in regions where the price index is less.

**2. HOW?**

What type of viz did you create? Why did you select the viz that you did?

For each of the Visualisation, identify at least 3 Gestalt principles employed.

For each of the Visualisation, mention how you strategically used pre-attentive attributes to draw the audience's attention.

**Line Chart** (Region wise Yearly Price Index comparison for sold houses (with Forecast)):

**What:**

The Line Chart compares the yearly price index of various regions and shows the trends in the prices over the year.

**Why:**

The Yearly trends can be best visualized using line charts.

**Gestalt principles used:**

* Law of Closure
* Law of Continuity
* Law of proximity
* Law of Connectivity

**Pre-attentive attributes used:**

* Enclosure: Bounded region showing Estimation of the forecast
* Colour
* Position

**Slope Graph** (Monthly Trend of Price Index):

**What:**

The slope graph helps understand the variation in the trend for month wise comparison of price indices.

**Why:**

For the comparison of trend for given two years, slope graph best shows the changes

Monthly trend between 2 years.

**Gestalt principles used:**

* Law of Closure
* Law of Similarity
* Law of proximity
* Law of focal point
* Law of Enclosure

**Pre-attentive attributes used:**

* Hue
* Position

**Bar Graph** (Region wise Sales Price):

**What:**

The bar graph shows the comparison of the cumulative sales price across the four regions

**Why:**

Categorical comparison of sales price between 4 regions can be shown best by Bar Graph.

**Gestalt principles Used:**

* Law of Closure
* Law of Continuity
* Law of Proximity

**Pre-attentive attributes Used:**

* Size
* Bar length
* Labels

**Area chart** (2005 Sales Price vs Sales Price):

**What:** The area chart shows sales price as compared to the benchmark sales price as that of year 2005.

**Why:** With area charts it is easy to identify the area where the sales price supersedes the sales price and by how much.

**Gestalt principles used:**

* Law of Enclosure
* Law of figure and ground
* Law of Continuity
* Law of Closure

**Pre-attentive attributes used:**

* Size
* Position
* Enclosure