

- **Scenario 1:** GameCo's marketing team has noticed that puzzle game sales are down this year. The finance director wants a report on what's causing this drop in sales, so the marketing team reach out to the analysts for help.

What type of analysis would you use?

This would be a diagnostic analysis because they are asking why the drop in sales is happening this year.

What is the most suitable form of variate analysis and type of statistics?

The more devolved analysis the better on this because it would paint a better picture. I would look at the relationship between genres and publishers to see if maybe publishers released more game titles in other genres or if they predicted the future sales based on outside events coming up. I would use a multivariate analysis at least looking at the relationship between different publishers, the genres that they released, the associated counts of titles that go with those genres, and the sales data that goes along with the different situations. I would use inferential statistics to see if the data on that year's sales figures of puzzle games correlates to the market sales data as a whole and then go from there depending on what that concluded.

Write three questions for each scenario outlining what information you would need in order to get the analysis up and running. What would the answers to these questions let you do that you couldn't otherwise?

Was this an Olympic year or a year for the world cup? Was a major motion picture released within the same month as one of their puzzle game titles? Was there a major world or cultural event within society (pandemic)? This can be causing shifts in interest. Focused interest in games related to sports is typically higher during the years that major sporting events happen. Also like seen over the past few years the pandemic had a huge influence on the market and its behavior across all avenues.

Did other retailers decide to enter the market selling puzzle games? Did they sell them for less than Gameco? Even if this only has an influence on puzzle games it could be an explanation. Other companies strategies could be to only attack one aspect of the video game market. If they sold certain games for less it could have driven some customers away from our stores.

Was there several other bigger game releases in different genres that shifted the sales away from puzzle games this year? Anticipation and hype in the market can have a massive influence on what people buy within a certain time period.

- **Scenario 2:** The sales team wants to know which games it should stock in each city in order to most effectively meet local customer demand. Shipping rates vary by location and this difference will need to be reflected in which games are recommended for which locations.

What type of analysis would you use?

This would be a prescriptive analysis because you would be offering suggestions for what should be done based on the historical data and the predictions that it implies.

What is the most suitable form of variate analysis and type of statistics?

You would be looking at historic sales data taking in to account the genre, publisher, and individual game titles sales data based on locations, as well as the shipping rates to those locations. I see more than 2 variables there so this would also be multivariate analysis. This would also be inferential statistics because you would be comparing individual store data to the whole data set to decide how to distribute based on shipping costs and availability of titles in the warehouse to optimize the best inflow of revenue.

Write three questions for each scenario outlining what information you would need in order to get the analysis up and running. What would the answers to these questions let you do that you couldn't otherwise?

How much of each title do we have on hand? This will determine the allocation of titles across the store fronts based on historical data.

What are shipping costs from our various hubs to the cities that we service? This will let us develop an optimization formula to help with the allocation of titles.

Are there other stores close by to any of the Gameco stores that they will be in direct competition with specific titles? Were they typically selling for less than us based on historical data? What games do we sell that they do not sell? Maybe we can shift allocations of titles based on this to places that are not near any competition. Maybe we ship more where there is huge competition if we know we can swing the lower price than other retailers of the same titles.

- **Scenario 3:** A GameCo executive is due to give a presentation at an upcoming gaming conference and they want to know how sales vary by month of the year.

What type of analysis would you use?

This would be a descriptive analysis because you would be looking over past data as a whole and just delivering the facts with visualizations to go along with them.

What is the most suitable form of variate analysis and type of statistics?

This would be a bivariate analysis because you would be comparing sales figures to months of the year. This is only two variables. This would also be descriptive statistics because you would be looking at all the sales data from the company and generalizing it.

Write three questions for each scenario outlining what information you would need in order to get the analysis up and running. What would the answers to these questions let you do that you couldn't otherwise?

Do we have multiple years of data available? This can give us trends and help to average the data over time to show trends and level out data that may have been from a BAD year or a REALLY good year.

How far do we want it broken down? Does this executive want to just show the general market, or do they want it broken down to publisher, genre, etc....? This will tell us how to go forward with the visualizations so that they represent what the executive is looking to present.

Do we want data from other companies included? Is the executive trying to procure new publishers? If our sales data is better than other stores on the market, then the executive may want to present this information to prospective publishers that they want to work with. Maybe they are looking to negotiate release dates with publishers at the company or exclusive rights to certain titles.

- **Scenario 4:** The Olympic Games will take place in six months. GameCo's operations team wants to forecast how many sports games it will sell in the months before, during, and after the games so it can order the correct amount from the production facility.

What type of analysis would you use?

This would be predictive analysis as forecasting is prediction. They are not asking for suggestion. Just an educated prediction based on historical data.

What is the most suitable form of variate analysis and type of statistics?

You are looking at units over time so this would be bivariate analysis with inferential statistics because we would be looking at variations in a sample and applying that towards a conclusion.

Write three questions for each scenario outlining what information you would need in order to get the analysis up and running. What would the answers to these questions let you do that you couldn't otherwise?

What is the unit sales data from the months leading up to, during, and after previous Olympic games? This would give us the base data to start looking at for answers.

Is this the summer or winter games coming up? This would dictate the specific months that we would be looking for. Giving summer Olympics data for an upcoming winter Olympics would not be proper data to look at and would be a true comparison because you wouldn't be looking at the same months of the year across the comparative data.

What country is hosting the games? This would most definitely help with predicting regional units needing to be produced because you could look specifically at which regions previous games were in to see the influence that had on regional sales.