Multiple Regression Models Case Study: Web Video on Demand

Web Video on Demand (WVOD) is an Internet video-on-demand streaming service. The company offers a subscription service for $5.99/month, which includes access to all programming and 30-second commercial intervals.

In the last year, the company has recently begun producing its own programming, including 30-, 60-, and 120-minute television shows, specials, and films. Programming has been developed for teen audiences as well as adults.

The following data represent the amount of money brought in through advertising sales, the average number of viewers, length of the program, and the average viewer age per program.

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| --- | --- | --- | --- |
| **Advertising Sales** **($)** | **Average # of Viewers** **(Millions)** | **Length of Program (Minutes)** | **Average Viewer Age****(Years)** |
| **28,000** | 10.1 | 30 | 30 |
| **25,500** | 11.4 | 30 | 25 |
| **31,000** | 19.9 | 60 | 30 |
| **29,000** | 13.6 | 60 | 38 |
| **20,500** | 12.5 | 60 | 20 |
| **14,500** | 3.5 | 30 | 15 |
| **27,000** | 15.1 | 60 | 24 |
| **23,500** | 3.7 | 30 | 17 |
| **19,500** | 4.3 | 30 | 19 |
| **23,000** | 12.2 | 120 | 45 |
| **18,000** | 5.1 | 120 | 19 |
| **29,500** | 15.9 | 60 | 28 |
| **30,000** | 16.8 | 120 | 31 |
| **25,000** | 8.5 | 120 | 58 |
| **22,500** | 9.1 | 30 | 43 |

The WVOD executives are in the process of evaluating a partnership with several independent filmmakers to fund and distribute socially conscious and diverse programming. The executives have asked for regression models to be developed based on specific needs. The three regression model requests and programming details are included below.

The WVOD executives would like to see a regression model that predicts the amount of advertising sales based on the number of viewers and the length of the program. Develop this regression model (“Regression Model A”). Web Video on Demand would like to acquire a 60-minute documentary special about social media and bullying. The special is aimed at teen viewers and is estimated to bring in 3.2 million viewers. Based on the regression model, predict the advertising sales that could be generated by the special.

The WVOD executives would also like to see a regression model that predicts the amount of advertising sales based on the number of viewers, the length of the program, and the average viewer age. Develop this regression model (“Regression Model B”). Web Video on Demand may acquire a 2-hour film that was a hit with critics and audiences at several international film festivals. Initial customer surveys indicate that the film could bring in 14.1 viewers and the average viewer age would be 32. Use this information to predict the advertising sales.