**Vertical Jump of Recreational Volleyball Players**

**Describe the Question and Theory that You Had.** How high can recreational volleyball players jump? My theory is that taller athletes will be more capable of jumping higher. In addition to this, people who resistance train and play volleyball more frequently will adapt to training stimuli which in turn will allow them to jump higher.

**Descriptive Statistics**

Vertical jump ~ training + height + confidence level + error

**DV:** vertical jump (in)

**IV 1:** training

* Number of sessions for volleyball in a week
* Number of resistance training sessions in a week

**IV 2:** height (in)

**IV 3:** confidence level (1-5 scale)

* I am someone who performs very well in sports.
* I am confident in my jumping capability.
* I don’t believe in my athletic ability.

Independent variables such as training frequency, height, and confidence level were taken via a survey using the Google Form document (https://forms.gle/PZ8GC1zy8oM8hAqj8). Each individual response was recorded, and the athletes were taken to a open volleyball gym to record the dependent variable: vertical jump. As the conductor of this experiment, I measured each individual’s standing reach and jumping reach myself using the Vertec device in order to create a more reliable dataset. To measure confidence levels, I included positive confidence (“I perform well in sports”), jump confidence (“I am confident in my jumping ability”), and negative confidence (“I am not confident in my athletic ability”) (reverse-scored). Confidence level was neither reliable nor inconsistent across these variables, with a raw alpha value of 0.49.

Text

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Text

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A screenshot of a computer

Description automatically generated with medium confidence



**Graph of DV**

Chart, histogram

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**Graph of IV 1**

Chart, scatter chart

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**Graph of IV 2**

Chart, scatter chart

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**Graph of IV 3**

Chart, histogram

Description automatically generated

**Linear Models**

**Model 1 = VJ ~ height + error**

Chart, box and whisker chart

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**Model 2 = VJ ~ frequency + error**

Chart, line chart

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**Model 3 = VJ ~ CONFIDENCE + error**

Chart

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**Table # Predicting DV from IV1 and IV2.** *Report Slopes*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 |
| IV1 | 1.2978 (0.4025) | -- | -- |
| IV2 | -- | 1.8435 (0.8826) | -- |
| IV3 | -- | -- | 2.3513 (2.462) |
| R2 | 0.426 | 0.238 | 0.061 |

Text

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Graphical user interface, text, application

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**What these Data Show:** There is only a slight positive correlation between height and positive jump. Taller athletes may only have a slight advantage in vertical jump. On the other hand, training frequency proved to be more important for vertical jump. There is a high positive correlation between resistance training sessions/volleyball practice days and vertical jump. Those who have an increased frequency display a higher vertical jump. The data regarding confidence level shows neutrality, where there is little to no correlation between jumping ability and confidence levels in sports. Height and training frequency are strong independent variables that influence vertical jump. On the other hand, confidence level of athletes is not a highly reliable or accurate variable.

**Ways to Use these Data (and Additional Questions to Consider):** Since height may not be a large contributing factor, vertical jump will not be affected by an individual’s stature. However, this does not account for jumping reach, since taller athletes will have an advantage in reaching higher regardless of vertical jump. In addition to this, it is important to implement and maintain the training frequency for recreational volleyball players since this is the main contributing factor to one’s vertical jump. Lastly, it appears that being confident in one’s athletic ability does not necessarily mean a higher vertical jump. This may be important in assessing athletes in sport psychology, but more information is needed. An additional question to consider is: how did the athletes feel on the day of vertical jump testing? This may be important since the data may or may not have been affected.