Statistical Analysis

Name of student

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Correlation is a technique used to measure the relationship between a set of variables. When two variables are found to be correlated, this means that they will vary together. If two variables increase together, that will mean that they have a positive correlation. A good example of two positively correlated variables is height and weight of a person. Negative correlation is a situation where two variables move in an opposite direction to each other. An example of negative correlation is body weight and time spent by a person on weight loss program. If weight-loss program is effective, more time will be spent and body weight will be much lower. The statistic used to show correlation is Pearson’s r (Statiaticalconcepts, 2010).

The numerical value of correlation coefficient can fall between -1 and 1 (Frost, 2015). Correlation closer to 1 will show a strong positive correlation whereas correlation closer to -1 shows a strong negative correlation. A positive sign with correlation coefficient shows that as one variable increases, there will be an increase in the other variable as well. A negative sign shows that two variables will move in the opposite direction to each other. The statistical significance of a correlation coefficient means that there is very less probability of a correlation value occurring by chance. Generally, a value of 0.05 is used as a level of significance. The effect size in case of correlation coefficient is also called explained variation and is denoted by r-squared. It shows the percentage of variation in the dependent variable caused by the independent variables. Correlation cannot let us know if one variable causes the change in another variable.

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| **Variable A** | **Variable B** | **Correlation:** |
| **positive, negative, minimal?** |
| Number of indoor basketball leagues in demographic area | Three college basketball teams and one NBA team in region to spark interest. | Positive |
| High demographic of younger target market. | Lack of any indoor sporting facilities. | Negative |
| High number of indoor sporting facilities. | Extremely warm geographic area. | Positive |
| Rural geographic setting. | High-income geographic area. | Negative |

The first set of variables will show a positive correlation because a higher number of indoor basketball leagues will attract more interest of college and NBA basketball teams.

If there are more young people in any geographic area, lack of indoor sporting facilities will not allow them to take part in any sporting activities. From the perspective of big D, the lack of indoor sporting facility will affect its business and despite having a large young population in target market, the company will not be able to sell its products. This will affect the outdoor sporting clients in a positive manner because young people will have no other option to play outside. In other words, company will be able to sell outdoor sports equipment in larger quantities in this case. This will be a long-term relation because it will take time to build new facilities of indoor facilities.

There is a positive correlation between higher number of indoor sporting facilities and extremely hot conditions outside. More people will prefer to play inside in case weather is hotter outside. The clients related to outdoor sporting goods will be badly affected by extreme weather. In this case, company will be able to increase the sale of indoor sports equipment to this geographical area. This will be a short-term relationship because weather will change over a short period of time.

There will be a negative correlation between the last two variables because a smaller number of people will prefer to live in rural areas once their incomes have risen. In this case the company can target rural as well as urban market so that it can offer outdoor sports equipment in rural area and indoor sports equipment in the urban areas.

# **References**

Frost, J. (2015). *https://statisticsbyjim.com/basics/correlations/.* Retrieved from https://statisticsbyjim.com: https://statisticsbyjim.com/basics/correlations/

Statiaticalconcepts. (2010, April). *http://statisticalconcepts.blogspot.com/2010/04/interpretation-of-correlation.html.* Retrieved from http://statisticalconcepts.blogspot.com: http://statisticalconcepts.blogspot.com/2010/04/interpretation-of-correlation.html