Student Survey - Paired Samples t-Test

Introduction

The dataset used for this analysis was obtained from Lock's Websuits dataset that was retrieved from http://www.lock5stat.com/datapage.html. Two variables were used: the number of hours students spend exercising and the number of hours spent watching TV. The Sampling is random.

Summary Statistics

To test the hypothesis that student spend more time exercising($M= 9.05, SE=5.749$) than watching TV ($M= 9.05, SE=5.749$), a dependant samples *t* test was performed. Prior to conducting the analysis, the assumption of normally distributed difference scores was examined as shown in Table 1. It will also be noted that the correlation between the conditions are estimated at $r=0.852$ suggesting that the dependent sample *t*-test is appropriate in this case. The null hypothesis will be rejected and the conclusion of this statistical analysis is that students spend more time exercising than watching TV, $t(3.59)= 6.041$, $p<0.05$.

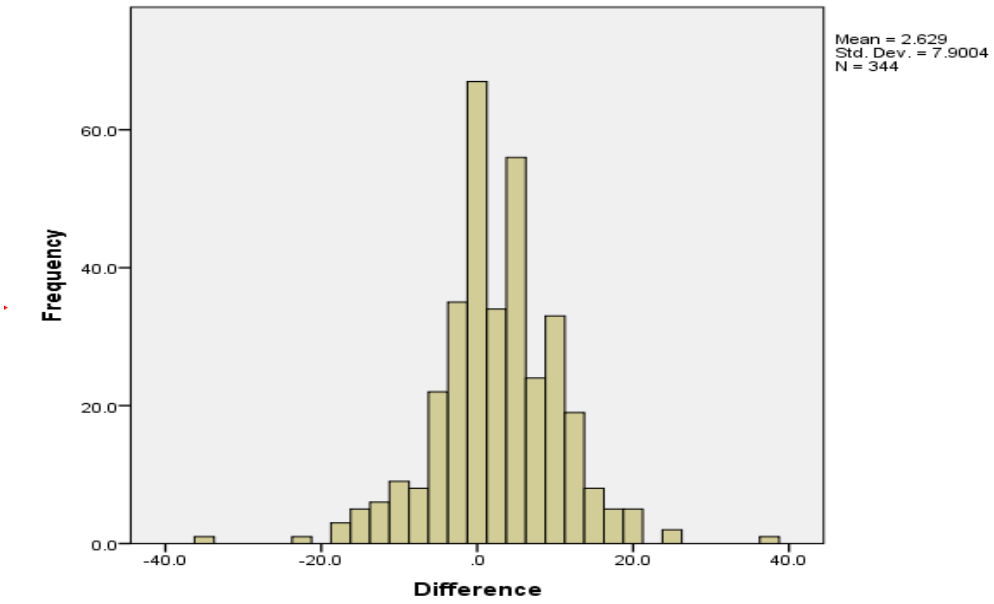

Table 1 : Distribution of Difference Scores

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Exercise	9.05	360	5.749	.303
	TV	6.51	360	5.590	.295

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Exercise & TV	360	.010	.852

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Exercise - TV	2.540	7.979	.421	1.713	3.367	6.041	359	.0000000038

Table 2: Paired Samples Test

Conclusion

The Paired Sample Statistics table shows that the difference between the means is 2.540

which indicates that the research hypothesis was correct. Students spend more time exercising than than watching TV. The Paired Sample Test table shows the p-value =.000000008 (Sig 2 tailed), the one tailed value will be zero as well (Sig 2 tailed divided by 2). Since the p-value is < 0.05, the null hypothesis will be rejected and the conclusion of this statistical analysis is that students spend more time exercising than watching TV.

References

Salkind, N. J. (2014). *Statistics for People Who (Think They) Hate Statistics (5th ed.)*. Thousand Oaks, CA: Sage Publications.

P. (2011, May 09). Paired Samples t Test: Using SPSS & Writing Up Your Results. Retrieved April 06, 2017, from https://www.youtube.com/watch?v=Uji6DugIvww