

Student's Name

Professor's Name

Course

Date

Regression Analysis of Weight and Eating Habits

Introduction

The report presents the findings of a regression analysis conducted to examine the relationship between weight as the dependent variable and frequency of consumption of vegetables (FCVC), number of main meals (NCP), and physical activity frequency (FAF) as the independent variables. The inspiration for conducting this research was influenced by (Palechor and Manotas 1), who conducted a nationwide survey on the referred topic, focusing on Mexico.

Methodology

The dataset for this analysis comprises 2,111 records collected from a web platform survey, including anonymous responses from individuals aged between 14 and 61 (Kaggle).

Results and Discussion

The regression model generated using STATA revealed the following results:

```
. regress weight fcvc ncp faf
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Source	SS	df	MS	Number of obs	=	2,111
Model	88525.5971	3	29508.5324	F(3, 2107)	=	45.75
Residual	1358886.88	2,107	644.939191	Prob > F	=	0.0000
Total	1447412.47	2,110	685.977475	R-squared	=	0.0612
				Adj R-squared	=	0.0598
				Root MSE	=	25.396

weight	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
fcvc	10.44723	1.036502	10.08	0.000	8.414558 12.47991
ncp	3.618509	.7171947	5.05	0.000	2.212025 5.024993
faf	-2.14321	.655565	-3.27	0.001	-3.428832 -.8575873
_cons	53.76106	3.158732	17.02	0.000	47.5665 59.95562

The model's R-squared value is 0.0612, indicating that approximately 6.12% of the variance in weight can be explained by the independent variables in the model. Among the independent variables, three eating habits were shown to have significant relationships with weight. The frequency of consumption of vegetables (FCVC) exhibited a positive relationship with a coefficient of 10.44723, meaning that, on average, for every one-unit increase in FCVC, weight increases by approximately 10.45 units. The p-value of 0.000 indicates a strong statistical significance. Similarly, the number of main meals (NCP) also demonstrated a positive relationship with weight. The coefficient of 3.618509 suggests that for every one-unit increase in NCP, weight increases by approximately 3.62 units. This relationship is statistically significant with a p-value of 0.000.

In contrast, physical activity frequency (FAF) exhibited a negative relationship with weight. The coefficient of -2.14321 indicates that, on average, for every one-unit increase in FAF, weight decreases by approximately 2.14 units. This relationship is also statistically significant, with a p-value of 0.001. However, the R-squared value mentioned above is relatively low (6.12%), indicating that the selected independent variables explain only a small portion of the variation in weight. Thus, other factors not included in the model might contribute to weight.

Works Cited

Kaggle. Obesity Based on Eating Habits, 2020,

www.kaggle.com/datasets/ankurbajaj9/obesitylevels/discussion/193986. Accessed 13

Jun. 2023.

Palechor, Fabio, and Alexis de la Hoz Manotas. "Dataset for Estimation of Obesity Levels Based on Eating Habits and Physical Condition in Individuals from Colombia, Peru and Mexico." *Data in Brief*, vol. 25, 2019, pp. 1–5.