What information should be included in a comprehensive report of regression results?

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April 30, 2024

A comprehensive report of regression results should include the following key information:

1. A clear and concise title: This should accurately reflect the purpose and scope of the regression analysis.

2. Background or introduction: This section should provide a brief overview of the research question or problem being addressed by the regression analysis.

3. Data description: It is important to provide a description of the data used in the regression analysis, including the source, sample size, and any relevant characteristics.

4. Model specification: This section should include details about the type of regression model used, the variables included in the model, and any transformations or interactions that were applied.

5. Assumptions: It is important to mention any assumptions that were made in the regression analysis and discuss their validity.

6. Results: The main findings of the regression analysis should be presented in a clear and organized manner, including coefficients, standard errors, p-values, and goodness-of-fit measures.

7. Interpretation: The results should be interpreted in the context of the research question, explaining the significance and direction of any relationships found.

8. Limitations: A discussion of any limitations or potential biases in the regression analysis should be included to provide a balanced perspective.

9. Conclusion: This section should summarize the main findings and implications of the regression analysis.

10. References: Any sources used in the regression analysis should be properly cited.

Overall, a comprehensive report of regression results should provide a thorough and accurate representation of the analysis conducted, allowing for a clear understanding of the relationships between variables and their significance in addressing the research question.

The Complete Guide: Report Regression Results

In statistics, linear regression models are used to quantify the relationship between one or more predictor

variables and a .

We can use the following general format to report the results of a :

Simple linear regression was used to test if significantly predicted .

The fitted regression model was:

The overall regression was statistically significant (R2 = , F(df regression, df residual) = , p =).

It was found that significantly predicted (β = , p =).

And we can use the following format to report the results of a :

Multiple linear regression was used to test if , , ... significantly predicted .

The fitted regression model was:

The overall regression was statistically significant (R2 = , F(df regression, df residual) = , p =).

It was found that significantly predicted (β = , p =).

It was found that did not significantly predict (β = , p =).

The following examples show how to report regression results for both a simple linear regression model and a multiple linear regression model.

Example: Reporting Results of Simple Linear Regression

Suppose a professor would like to use the number of hours studied to predict the exam score that students will receive on a certain exam. He collects data for 20 students and fits a simple linear regression model.

The following screenshot shows the output of the regression model:

D	E	F	G	H	I	J	K	L
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.8528							
R Square	0.7273							
Adjusted R Square	0.7121							
Standard Error	5.2805							
Observations	20							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	1338.2906	1338.2906	47.9952	0.0000			
Residual	18	501.9094	27.8839					
Total	19	1840.2000						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	67.1617	2.6633	25.2178	0.0000	61.5664	72.7570	61.5664	72.7570
hours	5.2503	0.7578	6.9279	0.0000	3.6581	6.8424	3.6581	6.8424

Here is how to report the results of the model:

Simple linear regression was used to test if hours studied significantly predicted exam score.

The fitted regression model was: Exam score = 67.1617 + 5.2503*(hours studied).

The overall regression was statistically significant (R2 = .73, F(1, 18) = 47.99, p < .000).

It was found that hours studied significantly predicted exam score (β = 5.2503, p < .000).

Example: Reporting Results of Multiple Linear Regression

Suppose a professor would like to use the number of hours studied and the number of prep exams taken to predict the exam score that students will receive on a certain exam. He collects data for 20 students and fits a multiple linear regression model.

The following screenshot shows the output of the regression model:

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.857
R Square	0.734
Adjusted R Square	0.703
Standard Error	5.366
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	1350.76	675.38	23.46	0.00
Residual	17	489.44	28.79		
Total	19	1840.20			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	67.67	2.82	24.03	0.00	61.73	73.61
hours	5.56	0.90	6.18	0.00	3.66	7.45
prep_exams	-0.60	0.91	-0.66	0.52	-2.53	1.33

Here is how to report the results of the model:

Multiple linear regression was used to test if hours studied and prep exams taken significantly predicted exam score.

The fitted regression model was: Exam Score = 67.67 + 5.56*(hours studied) - 0.60*(prep exams taken)

The overall regression was statistically significant (R2 = 0.73, F(2, 17) = 23.46, p = < .000).

It was found that hours studied significantly predicted exam score (β = 5.56, p = < .000).

It was found that prep exams taken did not significantly predict exam score (β = -0.60, p = 0.52).