

Model Answer: Hierarchical Multiple Regression Worksheet

Read the research scenario information below and then answer the questions.

Aim: Professor Jones wants to use a hierarchical multiple regression to analyse the contribution made by social support and outgoing personality on contentment at work, whilst controlling for the possible demographic effects of age and gender.

In the spaces below, please state the following:

1. The predictor variables are: **Age, Gender, Social Support, and Outgoing Personality**
2. The criterion variable is: **Contentment at Work**
3. The predictor variables that should be entered into step 1 of the model are:
___Age and Gender___
4. The predictor variables that should be entered into step 2 of the model are:
___Social support and Outgoing Personality___
5. Perform a hierarchical multiple regression on the data in the table below:

ID	Age	Gender	Social support	Outgoing personality	Contentment at work
1	23	Male	20	15	20
2	54	Male	10	30	15
3	18	Male	4	5	5
4	56	Female	17	16	20
5	34	Female	10	14	15
6	65	Male	11	8	10
7	27	Male	7	7	8
8	64	Female	4	4	5
9	19	Female	15	10	17
10	21	Male	17	5	17
11	32	Male	18	6	15
12	55	Male	11	12	18
13	47	Male	12	10	15
14	33	Female	16	16	17
15	19	Male	18	12	20
16	23	Female	14	13	14
17	34	Female	12	14	15
18	42	Male	10	4	5
19	34	Male	11	6	7
20	58	Female	10	10	11

6. Interpret the output and write up the results as you would for a report in the space below.

Hierarchical multiple regression was used to assess the contribution made by levels of reported social support and outgoing personality to predict levels of contentment at work, after controlling for the influence of age and gender. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity, and homoscedasticity. Age and gender were entered into step one of the model, explaining 6% of the variance in contentment at work. After entry of social support and outgoing personality at step two, the total variance explained by the model as a whole was 81%, $F(4, 19) = 16.21$; $p < 0.0001$. The two control measures explained an additional 75% of the variance in contentment at work, after controlling for age and gender, $r^2 \text{ change} = 0.75$, $F \text{ change}(2, 15) = 29.96$; $p < 0.0001$. In the final model, only the two control measures were statistically significant, with Social Support recording a higher beta value ($\beta = 0.73$, $p < 0.0001$) than Outgoing Personality ($\beta = 0.36$, $p < 0.01$).