

# PERSONALITY PROFILER

STATISTICAL METHODS AND COMPUTING  
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Dan Ernst  
Shauna Blackwell  
Katie Lehmann

The Golden Personality Profiler is a magnificent way to understand one's personality. The more a person knows about their personality, the more they can understand why they act the way they do in certain situations, such as in relationships or in a group setting. It is also an extraordinary way of understanding one's peers and the way they act in those similar situations.

Over the course of 70 years, psychologists have identified a number of traits to be tested on that are common among many people. From these traits, personality types were formed. According to psychologists, there are four component scales: extraverting (E) vs. introverting (I), sensing (S) vs. intuiting (N), thinking (T) vs. feeling (F), and organizing (Z) vs. adapting (A). These four scales characterize 16 personality types: eStZ, eNFz, iNTa, iStA, etc. From these personality types, there are four temperaments: NT, NF, SZ, and SA. The personality chart below in Figure 1 indicates what percentage of the population is each of the 16 and Figure 2 shows the percentage of the four temperaments.

<b>eNTa</b> 5%	<b>eNTz</b> 5%	<b>eNFa</b> 5%	<b>eNFz</b> 5%
<b>iNTa</b> 1%	<b>iNTz</b> 1%	<b>iNFa</b> 1%	<b>iNFz</b> 1%
<b>eSfZ</b> 13%	<b>eStZ</b> 13%	<b>eSfA</b> 13%	<b>eStA</b> 13%
<b>iSfZ</b> 6%	<b>iStZ</b> 6%	<b>iSfA</b> 6%	<b>iStA</b> 6%

Figure 1: 16 Personality Types

<b>NT</b> 12%	<b>NF</b> 12%
<b>SZ</b> 38%	<b>SA</b> 38%

Figure 2: Four Temperaments

Over the past several years, the engineering and business departments have selected approximately 286 students, the majority being engineering and business majors, to take the Golden personality profiler. After taking the test, each student was categorized as one of the four temperaments described above. The objective of the statistical analysis of the sample data is to determine its credibility. In order to do this, a test will be performed that will verify whether this sample data is an accurate representation of the population.

The first step in analyzing our data was to create a SAS file, uploaded from the Excel file containing the sample data. The objective was to find the frequency of each temperament (NF, NT, SA, and SZ). The SAS code and output are shown below.

```
options linesize = 75 ;

proc freq data = project ;
tables temp ;
run ;
```

The SAS System  
21:06 Sunday, April 16, 2006

The FREQ Procedure

Temp

Temp	Cumulative		Cumulative	
	Frequency	Percent	Frequency	Percent
NF	85	29.72	85	29.72
NT	87	30.42	172	60.14
SA	7	2.45	179	62.59
SZ	107	37.41	286	100.00

From this data, we have found that proportions of students are as follows: NF, 30%; NT 30.5%; SA, 2.5%; and SZ, 37%. In comparing these results with the population percentages, we observed that the results differed greatly. In order to confirm these observations, we decided to perform a Chi-Square test.

A Chi-Square test is a statistical test that tells us whether the observed differences between the population and the sample data are statistically significant.<sup>1</sup> This test compares the observed and expected counts of the sample data in order to obtain a Chi-Square statistic. The Chi-Square statistic is a measure of how far away the observed counts are from the expected counts.<sup>1</sup> The expected counts, shown in Table 1, were calculated by applying the known population percentages for each temperament to a sample size of 286.

**Table 1: Observed vs. Expected Counts**

Temperament	Observed	Expected
NF	85	34.32
NT	87	34.32
SA	7	108.68
SZ	107	108.68
<b>Total Number of Observations</b>	<b>286</b>	<b>286</b>

In order to perform a Chi-Square test, a null and alternative hypothesis must be stated. For this test, the hypotheses are as follows: