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**Internet Use x Personality**

*Introduction/Research*

The rise of the internet sparked the usage and obsession of technology. The constant need to fill each day with cellphones, social media, and distractions is all derived from the internet, so much so that it is now heavily being debated whether internet addiction is a real illness or not. Some believe it is like any other addiction and is difficult to stop while others believe it is just a habitual activity that should not be treated as a true addiction. Regardless, the use of the internet has wildly increased and with that so have people. People are constantly evolving and changing as technology and the world surrounding is progressing. For example, my one year old niece watches cartoons on my sister’s phone. When I was younger that was not possible, and surely enough for my sister or mother or any past generations it was different each era. So the question to arise from the study of developmental psychology is how exactly does this affect us? How does technology affect the way we develop, behave, and overall does the increasing use of the internet have anything to do with the way we are?

To analyze this generic question- what exactly are we compromised of? A big part of the way we behave and make decisions comes from the type of person we are which can be defines as personality. There are five parts to personality that are critically examined. The five factor personality traits, otherwise known as the Big Five (Goldberg, 1981), are made up of extraversion, openness, agreeableness, neuroticism and conscientiousness. This spectrum of traits classifies human behavior and can therefore, be applied to the relationship between internet use and personality.

Extraversion is the exact opposite of introversion. Where an introverted person is likely to stay reserved and to themselves. They enjoy spending time alone, while an extraverted person is more sociable and outgoing. Studies cannot strictly define how this character trait relates to internet use because it can be argued in both cases. An introverted person is more likely to use the internet more because they may feel safer online where they don’t have to necessarily be surrounded by people yet are still connecting with others. They also may enjoy internet use as a distraction or alternative to being with others and going out in the real world and doing things. On the other hand, an extraverted person may become addicted to the internet through social media. They may enjoy sharing and posting everything they do and constantly feel the need of others’ approval. It is also fair that both extraverted and introverted people are inclined to use communication apps – extraverted people are due to a more outgoing behavior – introverted people are due to shy behaviors so they are able to create a fake persona online. Because both ideals of the trait share the same result extraversion does not define anything in terms of internet usage per person.

The openness trait refers to a person’s openness for experience. It expresses their sense of curiosity and appreciation for new pursuits that they may not be familiar with or used to. People who score low in this category tend to be more conservative. They are not as openminded to new ideas and perspectives so are more avoidant when searching for new things. The internet is a database full of unlimited possibilities so it can be correlated that more open people are likely to seek out new information on the internet. However, this may be a stretch since the internet has many uses and it having a plethora of possibilities makes it far too broad of a generalization. The idea that the internet has infinite uses cannot directly be applied to the trait of openness because the craved curiosity may be fed through actual real life experiences rather than a click of a button on the web.

Agreeableness reflects how friendly a person is and how cooperative they are with others. This personality trait represents someone who is easy to get along with and someone that does not argue a lot. Disagreeable people are more likely to be unkind and less harmonic socially. This trait does not really come into play in terms of internet use but is one of the factors of personality that is to be accounted for. Although arbitrary, it can somehow affect internet use as applicable to the butterfly effect. However, for this focus the main two concerns in searching for what truly and most likely causes internet addiction are the personality traits of neuroticism and conscientiousness.

Neuroticism on the other hand, is theorized to play a large part in a person’s online presence. Neuroticism is defined by feelings of anxiety, anger, distress, and depression. It includes a variety of emotions that many people suffer with in the present. The question still remains whether the internet usage is causing neurotic behavior or if neurotic behavior influences people to use the internet more. Regardless, people who test high in this category often tend to have a high amount of online presence. The hypothesis behind it goes to show that people who are emotionally unstable seek refuge and comfort from the internet as a source of support in many ways. This can be from ways of communication with others that may help them feel better and online therapy or it can also be addictive online behaviors that may help them cope with the reality of their life. The correlation between the time spent on the internet is often representative of an addiction because it is something done everyday for an excessive amount of time, past necessity. The risk of addictive behavior is highly increased when one is emotionally unstable which brings to the conclusion that neuroticism does relate to the amount of internet usage. However, it is not to say that all people with anxiety, anger, distress, and depression are heavy internet users, but the relation does exist none the less.

Similarly, conscientiousness also plays a large role in the usage score because it has to do with self-discipline. People with self-discipline are unlikely to have an addiction and people who score high in the conscientious trait are not careless and impulsive. Therefore, those who are conscientious are less likely to form an addiction. While it is still debated on whether internet use is an actual addiction or not, the increase and high amounts of time on the internet is accounted for. If an individual is organized and able to discipline themselves, they can account for the amount of time they spend online. This trait reflects reasonable behavior which is why when in the testing phase it is important to look out for a low score in conscientiousness for a high use of internet.

While the subject of the matter is internet use and its increase in it, it is still questioned whether the term “addiction” is the correct expression. An addiction is usually defined as something chemical and often times has to deal with drugs, alcohol, or even food – which is also still debated by many. However, these are all defined addictions in “the books”, but pharmaceutical companies are still looking for whether internet addiction is real. Most of the pharma companies want to validate it so that they can gain money in selling anti-depressants as a solution to this issue. This is also where the initial spark in belief of neurotic and conscientious behavior having an affect on the addiction. Although the pharma companies motives are wrong and to increase money, increase in internet usage is still a matter that should be discussed and analyzed. Whether internet use is causing depression or depression is the reason people turn to internet, there is definitely a correlation between the two. It can also be that both may affect each other in ways that feed of the other. For example, if depression causes people to lean towards the internet for negative reasons and spend a long time on it, they may feel depressed for longer rather than seeking help and therefore the internet is causing depression. It can turn into a monstrous cycle and this is one of the many possibilities of the correlation between the two variables and is why internet use should be regulated by a conscientious mind. While this may be a negative, there is also the possibility that a depressed person is turning to the internet for help such as online therapy and that may be the increase in internet usage making it a positive result. This is exactly why the results of this study can neither conclude whether this relationship is mentally good or bad. For health reasons this study does not certify a direct reasoning for behaviors. However, the correlation can help prove whether depressed people use the internet more or not – whether that is healthy or not cannot be determined in this simple study. The actual behavior that is done online by people is not what is being evaluated, but rather their behavior and presence in a more general view.

*Approach/Code*

This study focuses on *which* of the five factor personalities correlate heavily/affect internet usage and which of the five factor personalities internet usage affects. The study does not focus on the specifics such as delving into how each of the five factor personality traits are expressed online which can be used more in psychology to determine whether the usage of the internet is bad or not. The questions based are to see if the theory that a high score in neuroticism paired with a low score in conscientiousness have a heavy online presence. The ratio to determine that will be accounted for with multiple data to come to a conclusion. Another difficulty to express is which variable affects which – with internet usage being one variable and a high score in neuroticism with a low score in conscientiousness as another variable. With that in mind next is how to determine all these scores and how they are implemented in the code.

PsychoPy3 is the program used to develop the research for this study. The program allows for simple display code to create a questionnaire of the two tests. The first part is a generic questionnaire with rating responses created by Dr. Kimberly Young to determine whether a person is addicted to the internet. The ratings run from 0-5. 0 means the question does not apply to you. 1 means it is rare, 2 is occasionally, 3 is frequent, 4 is often, and 5 is always. Those who score with 5’s use the internet more than might be fit. The questions then calculate a raw score from all the ratings added up and if the rating is between 20-49 points you are an average on-line user. If you score 50-79 points you may use the internet a lot more and may run into some life issues because of it. Scoring 80-100 points ensures a significant issue in a person’s day to day life because this means that they are addicted. This could affect work life, school life, home life, and interactions with people surrounding. So when searching for the correlation of high neuroticism and low conscientiousness for this study it is important to note users with a score higher than 80 for the first part of the research. The second part is the personality test adapted from the “Big Five Inventory in English and German Journal of Research in Personality”. The test is a shortened version of ten statements with a simple rating scale to assess how much the statement applies to you. The scale rates from 1 to 5. 1 represents disagree strongly, 2 is disagree a little, 3 is neither agree nor disagree, 4 is agree a little, and 5 is agree strongly. The scores are calculated differently and a little more complicated from the internet addiction questionnaire. To count the five personality trait’s score there is an equation for each. The numbers indicate the number of the question in the order in the test. The R stands for reversed score for that question. (For example for Extraversion the score is 1R + 5. So you would take the reverse of 1 and add the score of 5. If you rated question 1 with a 4 then you would take the reverse of it which would be 2.) The equations follow below for each category:

* + Extraversion : 1R + 5
  + Agreeableness : 3 + 7R
  + Conscientiousness : 3R + 8
  + Neuroticism : 4R + 9
  + Openness : 5R + 10

For the purpose of this study to simplify the calculations, I’ll be searching for a score higher than or equal to 6 to be considered a high score in neuroticism and a score lower than 6 to be considered as not being conscientious since the highest score that is possible is 10 while the lowest being 2. However, the actual ratings and determinations are much more complex in the world of psychology.

With that, implementing both of these tests on PsychoPy3 is first done through the builder view. It creates a simple diagram to demonstrate what each slide contains. The first couple of slides usually display a welcome screen and then an instruction screen. After that proceeds the actual questions or research testings. At first, I made the mistake of making a total of 20-30 slides for each question. However, later I learned that inserting a loop can make this process easier. So, I ended up with only 6 slides and 2 main loops for each type of test. The first slide was a basic welcome screen that welcomes the user to the study and requires a response of clicking the spacebar to continue to the next screen. The second screen introduces the idea of the first part of the study which is the Internet Addiction test. The slide contains instructions including the meaning of each number for the proceeding rating numbers. Again, the slide requires the spacebar input to continue. The next block contains a loop of twenty slides with the internet addiction questions on them. Each slide has a rating displayed and takes in a response from the user. The next slide is a welcome screen with instructions for the second part which is the personality questions. Using the same format, the next block is a loop containing 10 slides with the same type of parameters and responses. Ideally, the last slides would present a synopsis of the individual’s results.

*Analysis*

The code portion of the project is written in Python and comprised of all these broad aspects into meticulous code. For both of the test the way the questions appear is through reading an excel file as to make it easier for the runtime with the loop. It iterates through each excel line to present the question on the screen in the testing loops. Once the data is obtained it can be calculated using different algorithms. These algorithms and analysis are difficult to do on a computer because it is different for each individual. Calculations are based off each score in the five categories so moving forward it would be multiple comparisons where the code would look like multiple else/if statements. However, with this project it was difficult for me to figure out how to access the actual results of each participant. Because of this, I proceeded manually.

With the conclusion of the results it can prove that the hypothesized statement is true. However, the sample size of the data being collected only amounted to a test group of 10 participants and varied only slightly in age group. On a larger scale operation this study should test all types of people with different backgrounds/fields of studies, age groups, and even ethnicities just to assure diversity amongst the results. There are many improvements that could have been made in the process of this experiment with both the code and the groups and people that were chosen for participation. In the end, it did conclude from the small sample size that mainly people who had more neurotic and less conscientious habits tend to use the internet more than those who did not.