The Difference in the Degree of Harm Suffered by Extroverts and Introverts When They Receive Negative Comments on Social Media

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Abstract: Today's teenagers, as the new generation most susceptible to the influence of the internet, use their phones very frequently, and participating in the online world has become the main theme of their lives. Online platforms have become the trigger for adolescent psychological disorders. Secondly, teenagers may experience feelings of jealousy, comparison, and inferiority when using these media. However, research has also found that teenagers who love sports and life are less likely to suffer from digital depression, and they can face this series of negative emotions with an optimistic and positive attitude. Therefore, the author would like to know if there is a difference in the degree of harm suffered by extroverts and introverts when receiving negative reviews on social media, and its magnitude. Hoping that through this study, teenagers can learn how to alleviate negative emotions caused by the internet and reduce the risk of depression. The method used will be an experiment, and the author will imitate the method in the article Why Do Adolescents Receive Negative Feedback And Who Is Most At Risk?: using the modified NEO-FFI to focus on the basic features, language features, and interactive features of users' published content, and infer whether their personality is extraversion or neuroobjectism in Big Five. The expected experimental result is that people with higher scores for extroversion generally have fewer negative emotions than those with higher scores for introversion, and the degree of difference between them will intensify over time.

Keywords: teenagers, social media, negative emotions, the difference between extroverts and introverts

1.   Introduction

Social media was initially just a form of entertainment and communication for people, but over time, the hidden malice that people endure in the real world began to pour out recklessly on social media. Generally speaking, extroverts seem to have stronger psychological resilience, can better accept and transform the malice they receive, and turn to seek happiness in real life [1]. However, introverted individuals, due to their limited social interaction, seem unable to digest and alleviate malice. On the contrary, they constantly experience mental exhaustion, making it difficult to recover from negative emotions. Over time, negative emotions can easily lead to mental illness. In the past, many studies have provided research background and premises: firstly, it has been clearly stated in

articles such as "Is Social Media Managing Our Lives?" that social media does have a significant negative impact on adolescents [2]. Secondly, research findings indicate that obtaining negative reviews on social media can easily have a negative impact because it poses a threat to the sense of belonging and self-esteem of media users [3]. Also, researchers found that for individuals with psychological fragility and high levels of depression, social media brings more significant negative effects, including feeling lonely and excluded online [4]. Finally, in "Why Do Adolescents Receive Negative Feedback And Who Is Most At Risk?", the researchers mentioned that receiving negative reviews online is equivalent to or even higher than being insulted in real life [5], and this paper also suggests that extroverts generally have fewer negative emotions than introverts. However, time may also have an impact on emotions [6], which is why the author will need to conduct another survey in addition to the first one in a few hours. Hoping that through this study, some of the differences in negative emotions between extroverts and introverts can be revealed, and lay the foundation for further related research in the future.

2.   Present Work

The author plan to gather extroverts and introverts and issue them with indiscriminate online negative reviews, and then measure their negative emotions and compare their correlations. The expected results and findings are that people with higher scores of extroversions will have fewer negative emotions than those with higher scores of introversions, and over time, the degree of difference between them will intensify by asking them to receive negative reviews and conducting surveys to rate their negative emotions.

3.   Experiment

Method. The author will report all measures, manipulations, and exclusions. This study will be approved by and carried out in accordance with the recommendations of the Institutional Review Board for human participants with written informed consent obtained from all participants.

Participants. 500 individuals will be recruited for participation in exchange for 109 individuals with higher scores for extroversion and 109 individuals with higher scores for introversion. Participants will be excluded because their introverted and extroverted scores are almost the same. The author hope to achieve a sample size of 109 for each group, that means a total of 218 people.

The primary hypothesis involved assessing how many participants are needed in total. The author performed a power analysis using the software package G*Power. The results indicated that with N=3.28, the experiment could detect an effect size of Cohen's d of 30%, using a paired t-test at a 5% alpha level (two-tailed) threshold with 90% statistical power.

Experimental Design. The author plan to use experimental methods because the author want to manipulate and casual inference. The experimental plan proposed is to first have approximately 200 people do a survey questionnaire related to their personality in advance, and the measurement standard is derived from the paper 'Extraverts tweet differently from introverts in Weibo'. Then a fake social media application will be created for this experiment. They will be told that the purpose of gathering them is to test the functionality and practicality of the application, and let them share their ideas or daily life on it. Then, negative comments wull be sent to everyone indiscriminately. Once they receive it, the author will immediately send a survey questionnaire to inquire about their feelings and emotions about it. However, considering that time may alleviate or deepen their negative emotions to varying degrees based on their personality, another survey questionnaire will be released in a few hours to inquire about their current feelings and emotions towards the negative reviews they received earlier. As for how to measure 'negative emotions and emotions', I will use PANAS which was developed in 1988 by psychologists David Watson, Lee Anna Clark, and Auke

Tellegen. When using the PANAS, participants gauge their feelings and respond via a questionnaire with 20 items. A 5-point Likert scale is then used for scoring. Finally, the two data will be combined into a chart to visualize the relationship between them [7].

Procedures. Participants will first be divided into two groups: extroverted and introverted. They will be asked to post content about themselves on a fake social media platform, and then receive negative reviews. In the next few minutes and a few hours, they will be asked to conduct two survey questionnaires to rate their negative emotions

Measure 1. First are the measurement methods for extroversion and introversion, The author uses the measure method from Extroverts tweet differently from introverts in Weibo: Using a web page called NEO-FFI to focus on the basic features, language features, and interactive features of users' published content, and infer whether their personality is an extraversion or neuron in Big Five.[1]

Measure 2. PANAS, which was developed in 1988 by psychologists David Watson, Lee Anna Clark, and Auke Tellegen, will be used to measure their negative emotions. When using the PANAS, participants gauge their feelings and respond via a questionnaire with 20 items. A 5-point Likert scale is then used for scoring [7].

Data Analytic Approach. The analysis method is to draw something similar to a coordinate axis, where the x-axis is their score on extroversion and the y-axis is their previous rating of their negative emotions, in order to observe the relationship between the x-axis and the y-axis

Results. When the x-axis increases, the y-axis will decrease, and the difference shown in the second survey results will be greater than in the first survey

Aim 1. The author expects to find people with high scores for extroverts rate their negative emotions higher than those with high scores for introverts. Specifically, as illustrated in Figure 1, the author predicts that when the x-axis increases, the y-axis will decrease.

Aim 2. The author expects to find the difference displayed in the second survey is greater than that in the first survey. Specifically, as illustrated in Figure 2, its slope is expected to be larger than in the first image.

Figure1. The top panel illustrates that people with high scores for extroverts have fewer negative emotions than those with high scores for introverts, but the difference is not significant.

Figure2. The next panel illustrates that over time, there is a greater difference in negative emotions between individuals with high scores for extroversion and those with high scores for introversion.

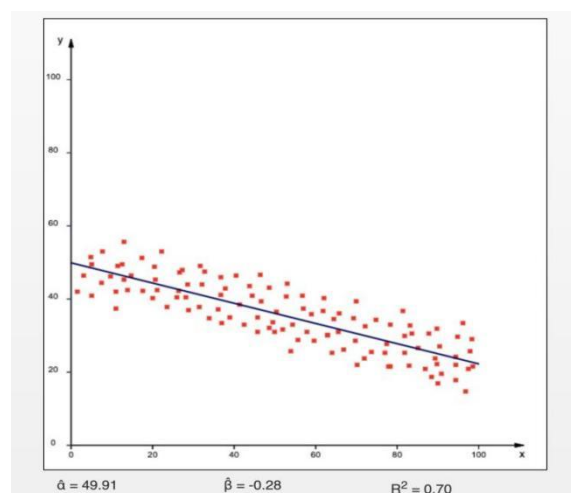$\hat{\alpha} = 49.91$ $\qquad$ $\hat{\beta} = -0.28$ $\qquad$ $R^2 = 0.70$

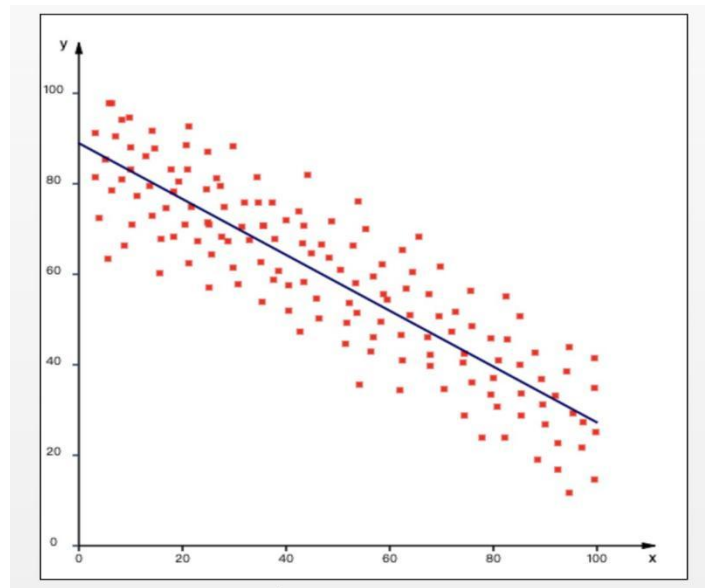Figure 1: Illustration of the differences between extroverts and introverts in the first test.

Figure 2: Illustration of differences reflected in the second test between introverts and extroverts.

4. General Discussion

The author plan to use experimental methods to rate extroverts and introverts' negative emotions minutes and hours after receiving negative reviews online, and expected to find that people with higher scores of extroversions will have fewer negative emotions than those with higher scores of introversions, and over time, the degree of difference between them will intensify. Hoping that through this study, some of the differences in negative emotions between extroverts and introverts can be revealed, and lay the foundation for further related research in the future. However, this study also has certain limitations, such as the specific content of negative reviews becoming one of the factors that affect their negative emotions. For example, simply saying that a person is ugly and insulting their parents and family may cause different negative emotions, and the degree of malice is also important. Secondly, this study cannot completely include all extroverts and introverts, as there may be some special circumstances. For example, extroverts may only constantly socialize and appear sunny because they are too concerned about others' opinions, while an introverted person may not be due to poor social skills, but because they have a strong inner world that does not require much recognition from others. If the author wants to delve deeper into the research in the future, author will study the impact of the content and malicious level of online negative reviews on people with different personalities.

5. Conclusion

In summary, the research findings and conclusion are that extroverts generate fewer negative emotions after receiving negative reviews online than introverts, and the difference between the two groups will increase over time. The focus of this paper is on studying the specific negative effects of online negative reviews that no one has studied before. The main exploration is to increase negative emotions, and for the first time, time is considered as one of the influencing factors. The research significance of this paper lies in its ability to reveal some differences in negative emotions between extroverts and introverts, and lay the foundation for future related research. The future direction may be the impact of the content and degree of malice of online negative comments on people with different personalities.

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