Will Photoshopping Degree Indicates the Implicit Self-Esteem Level?

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ABSTRACT

Following the development of technology, sharing and editing selfies have become easier to do than ever. Obviously, it means that this change of life would impact the behaviors and perceptions of people in an unprecedented form. This study reports a possible form of correlation between editing selfies and Implicit Self-Esteem (ISE). The ISE level of the participants would be measure by Endowment Effect which is previously proven able to prevent interferences. The ISE level of participants would be measured before and after they receive their opportunity to edit their selfies.

Keywords: Implicit Self-Esteem, Photoshopping, Self-Esteem

1. INTRODUCTION

Social networks which allow users to upload their photos have impressively grown their popularity in the past two decades. With the dramatically increased number of users, posting selfies online has become more and more favorable, especially among young users. As a result, editing photos become favorable to these users who usually post their photo online. With heavy use of photoshopping, it might establish unrealistic beauty standards to society which might cause harmful consequences such as eating disorders [1]. Additionally, previous studies already manifest that editing photos of oneself could impact users to change their view on "self-objectification and self-concept clarity"[2]. According to others' studies, self-concept is "the totality of a complex, organized, and dynamic system of learned beliefs, attitudes and opinions that each person holds to be true about his or her personal existence"[3], and self-esteem is the aspect of how people would normally feel and rate about the value or worth of themselves. It is a particular measurement of a component of self-concept[4]. It is already known that heavy use of photoshopping and social media could increase the anxiety level of its users, which could cause eating disorder if it is severe[1,5]. It is also known that the suicide rate for adolescences is correlated with it[6]. However, these studies are too broad, topics such as to what degree would photoshop effect or indicate self-esteem are yet unclear. Therefore, this study narrows down on further unraveling the relationship between photoshopping and a specific aspect

of self-esteem: Implicit Self-Esteem—how people evaluate themselves without expressing it to others.

In this paper, will photoshopping degree indicates the ISE level of its users, or will it influence the ISE level of its users is studied. If indeed there is a certain correlation between these two items and has been found out, unhealthy acts could be prevented to create a better environment for social media users. Since most studies correlate with this topic suggest that social media and photoshopping would reduce the self-evaluation of its users, prediction of "higher photoshopping degree indicates lower ISE level" is made.

The endowment effect will be used in this study to measure the ISE level of participants who edit their selfies. Unlike the Implicit Association Test (IAT), this effect could prevent participants from being influence by interferences such as cultural norms and more testable while increasing validity at the same time[7,8]. By allowing participants to own the good, participants would create a psychological association with the good, applying their self-evaluation toward the good unconsciously[9]. This study would measure the maximum Willingness to Pay (WTP) for goods by participants before they own or being rewarded the good and the minimum Willingness to Accept (WTA) to give away this good after they possess the good. The ratio of WTA to WTP would indicate the ISE level of the participants. This ratio of differences would be positively correlated with the ISE level. Therefore, if an individual has a high ISE level, his or her ratio of WTA to WTP would be high, vice versa for individuals whose ISE level is low.

2. EXPERIMENT METHOD:

2.1. Participants.

The sample will consist of both male and female participants age from 16 to 30. Participants will be recruited via social media platforms such as WeChat, Instagram, Facebook, Twitter, etc. due to a high percentage of users of these platforms might post their selfies online. All participants should have basic knowledge of the price of the common good (e.g., coffee mug, key chain, etc.) Since that this study focus on the relationship between photoshopping and ISE level, participants should have basic knowledge of editing selfies. It does not necessarily require participants to master photo editing skills, but the ability to use photoshopping software is required. In this study, the ethnicity of participants will not be essential, therefore, no limitation will be made for the race of participants. Around 300 participants will be recruited in this study. Since not all participants will be able to complete the whole test, 50 extra participants will be recruited.

2.2. Materials

A list of 12 objects will be shown for participants to evaluate the price. Listed below: Chocolate, peanut brittle, soap, a key ring, plastic combs, a comic book, playing cards, coffee mug, postcards, a phone case, a stuffed toy, and a cupcake.

An isolated room where participants could edit their photos without being interrupted or disturbed.

A photo editing software.

2.3. ISE Level Test

ISE level will be measure by using the endowment effect. Two data will be collected during the ISE level test: the maximum price of Willingness to Pay (WTP) for goods of the participants and the minimum price of Willingness to Accept (WTA) for giving goods away of the participants. It is because people create an association between themselves and the possession they own[7] people would rate their possession higher to enhance their self-esteem which includes implicit self-esteem. By calculating the result of the differences between WTP and WTA, the degree of how much they project themselves on their possession would represent their ISE level.

During the endowment effect test, participants will enter an isolated room. After they are seated, 8 objects which have similar or identical marketing sale prices would be displayed respectively on the table. Each object would be exposed to participants for only 15 seconds to prevent the result of positive contagion [10], which participants might evaluate objects more positively after physical contact with it. Participants would then be asked the maximum price they are willing to pay for these objects individually. One of the 8 objects on the table will be randomly assigned to be a gift to participants as a reward for participating in this study. The experimenter would later ask the participants the minimum price they are willing to sell the object they were rewarded. The other 7 displayed objects which are not assigned to be a gift during the test will be used as distractors.

2.4. Pre-Test

Aiming to eliminate the possibility that participants might rate the displayed objects differently based on their preferences, a pre-test must be carried out. This experiment plan to imitate the second study in the article "On the Social Nature of Nonsocial Perception: The Mere Ownership Effect" written by James K. Beggan in 1992. The eight objects being exposed to the participants should have globally similar favorability. Therefore, a group of participants different from the actual study will be recruited. This group of participants will fill out a form of Likert scale to rate their feeling toward the objects with 1 being not favorable at all and 9 being very favorable. Twelve objects will be measured, listed above in "Materials." After the data of how participants to rate these objects were collected, eight out of twelve objects which are closest to the neutral point (score = 5 in the Likert scale) will be selected as the tools in the actual study.

2.5. Procedures

In this test, participants will finish the ISE level test at the beginning of the study. The ISE level of participants is measured via using the endowment effect as previously mentioned. After that, participants will enter an isolated room. In this room, the experimenter will require participants to take a photo of themselves that they are willing to post on social media with only facial features included in this photo. Participants will then be told to stay in this room to wait for the "experiment" to begin. Participants will then be left out in this room for 15 minutes. During this time, participants are allowed to freely edit their selfies. They have the right to choose not to edit the photo they took at all or edit the selfie whatever they want. However, only a list of facial features is allowed to edit in this study. These features include five aspects: eyes, nose, mouth, face shape, and skin smoothness. The percentage of change on these facial features will be collected to be further analyzed later as the data of the degree of their photoshopping.

Due to participants might not view their facial features as equally important as another, a math model must be utilized to quantify the photo changing degree. For example, some might believe that beautiful eyes are more important than their face shape. As a result, these participants might focus on editing their eyes more than

other participants even if they have similar ISE levels. Therefore, the degree of change on their face needs to be calculated carefully instead of simply sum up the percentage they changed. In this study, structural equation modeling is used to construct the degree of change of selfies. In this modeling, each facial features represent a scale individually. Each scale will be multiplied with a coefficient specifically for it which represents how important is it. The maximum of each scale will be 100, meaning changing that specific facial feature at the maximum degree that photo editing software could provide. After these scales finished the multiplication with its coefficient, the maximum result of summing these five scales up should be 1, representing changing 100% of their face.

Measure 1: Maximum Willingness to Pay (WTP) of participants to purchase good.

Measure 2: Minimum Willingness to Accept (WTA) of participants to give away the good.

Measure 3: Photoshopping degree constructs by structural equation modeling.

3. COUNTERBALANCE

Assuming that photoshopping degree of selfies could be an indicator of the ISE level, participants will be randomly assigned into two different groups in this study. Group A would finish the ISE level test before they start to edit their selfie whereas Group B would finish the ISE level test after they edit their selfie. In this study, the result that photoshopping will not impact the ISE level of participants is predicted. According to this prediction, Group A and Group B should produce a similar result as Graph 1. However, if editing a selfie does more than only indicates the ISE level of individuals but also impacts the ISE level, the ISE level of the two groups would have

significant differences. For example, if editing selfies manipulated the ISE level, Group B which receive the ISE level test after photoshopping should have a significantly lower mean in their ISE level test.

4. RESULTS

4.1 Descriptive statistics

In this study, both t-test (also known as chi-square test) and coefficient of determination will be utilized to demonstrate the validity and predictability of the data. *Table 1* listed below shows the data collected from the group A participants. It includes the degree of change of their selfie in percentage, WTP, WTA, and the ratio of WTA to WTP.

Table 1: Correlation Between Photoshopping Degree and ISE Level

	Degree of photoshop (%)	WTP (dollar)	WTA (dollar)	Ratio
Participan 1	29.10	25	100	4
Participan 2	29.10	43	135	3.1395349
Participan 3	22.30	22	103	4.6818182
Participan 4	15.90	1.3	8	6.1538462
Participan 5	21.80	54	232	4.2962963
Participan 6	53.70	37	69	1.8648649
Participan 7	17.80	125	800	6.4
Participan 8	15.70	78	522	6.6923077
Participan 9	32.90	97	300	3.0927835
Participan 10	13.20	14	100	7.1428571

Correlation Between Photoshopping Degree and ISE Level Graph 1 visualized the data from *Table 1* and further demonstrated the calculated p value from the t-test and the R value from the coefficient of determination.
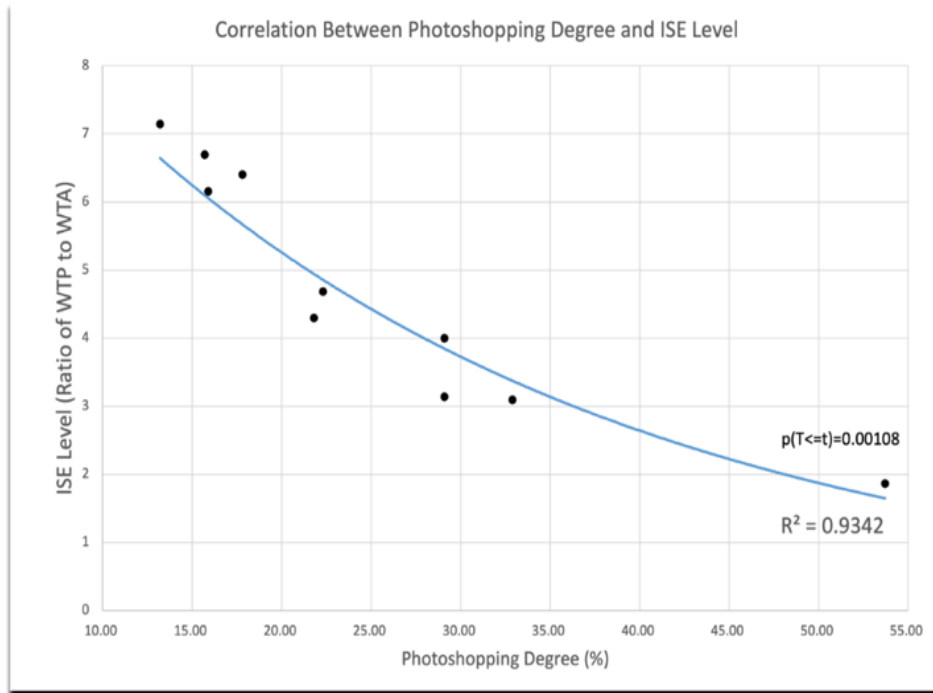
Figure 1: Correlation Between Photoshopping Degree and ISE Level

As shown in the diagram, the p value equals to 0.00108 which is obviously lower than the maximum p value threshold (<0.05). It demonstrates the exitance of significant differences between the degree of photoshopping and the ISE level of participants. Additionally, the r value calculated from the coefficient of determination is close to the maximum value of 1, representing the result from this group is highly predictable.

The data represents that photoshopping degree is able to predict the ISE level of its users. The result of this study could be applied to social media users aged from 16 to 30 years old.

5. CONCLUSION

According to the data, photoshopping degree can predict the ISE level of its users with high validity. Similar to the previous studies from Woods and McLean, a high photoshopping degree is related to a low ISE level.

One of the mechanisms that might explain this phenomenon is the "concept of self" created by Carl Rogers. This study assumes the image after photoshopping is the ideal self and the original photo is the real self. As the photoshopping degree increase, more deviation there is from the real self and ideal self, meaning the gap developed. When a huge gap is developed between these two selves, self-esteem could be affected by it. Sometimes, mental malfunction or even mental disorders such as borderline personality disorder and Depression might occur as well due to this huge gap.

In the future, the deeper relationship between photoshopping and ISE level will be studied. Would photoshopping affect the ISE level is yet unclean. Therefore, in the future, ISE level tests might be required before and after the photoshopping process. If the ratio of WTA to WTP is reduced significantly after selfie editing, it will be viewed that ISE level will be affected by the photoshopping.

This study could be applied to young social media users. If the ISE level of the users maintains an unhealthy level for a certain amount of time, it could provide a warning to the users to seek help before they develop unhealthy behaviors and attitudes.

Due to the counterbalance test is not processed, if photoshopping would impact the ISE level of its users is yet unknown. Also, this study only focused on the social media users aged from 16 to 30 years old, would it still be functional for the elder, or children are not clear. Additionally, individuals who do not use social media or take selfies, might not be sensitive to photo editing, so this study might not be able to correlate with these people strongly.

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