

POSTER: The Personalities of Social Media Posts and Photos

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ABSTRACT

What a person chooses to share on social media can be very telling as to what their personality is. A person can show their personality through how many photos they post, what kinds of photos they post, and what kind of language they tend to use. This research investigates the correlation between a person's personality type and the photos and tweets which that person posts. Social media information and personality types were collected from two different platforms, SONA (college-age students) and MTurk (crowdsourcing platform). The same survey was given to both platforms. Participants answered questions pertaining to their personality, and based on these answers were assigned a True Color and scores for Big Five. Our results show that people who identified with the green True Color self schema tended to share more photos than the other True Color categories. Additionally, our results show that people with Open personality types tend to post more photos than other Big Five personality types, and those photos tend to have more people in them than other personality types.

CCS CONCEPTS

• **Security and privacy** → **Social aspects of security and privacy**; • **Social and professional topics** → *User characteristics*.

KEYWORDS

Tweets, Object Recognition, Personality

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1 INTRODUCTION

Social media is a popular platform for people to post, share stories, and share pictures. It is well-known that some people share too much. However, the motivation of this work is to determine if certain types of people tend to share particular messages or pictures. As an example, could people with an extrovert personality share pictures with more people in them?

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The survey for this study was distributed through two different platforms: SONA and MTurk. The SONA platform consisted of college age students in an introductory psychology class. The survey is taken by each student for class or extra credit. The participants in the MTurk [8] survey completed this survey in exchange for monetary compensation.

In this research, the main goal is to determine if there is a correlation between the personality self-schema of participants and the participants' social media photos and tweets. If a correlation could be found between a participant's personality and social media posts, this would indicate that a person's personality can be, in part, determined by what they choose to share on social media. This could allow for automatic classification of personality based only on social media post or pictures shared.

From our results, we found that participants with higher levels of openness, one of the Big Five traits [9] personality types tended to share more photos in general and had more people in their photos than other participants. It has been shown that openness is related to creativity [5], which might explain the sharing of more photos. Additionally, we found that participants with a green True Color [1] self-schema tended to share more photos on average than other True Color participants. We did not find any correlation between a person's tweets and their personality type.

The main contribution of this paper is that personality type has an effect on the types of photos that people choose to share.

2 BACKGROUND

Participants' social media handles for Instagram and Twitter were given in the survey. These handles were used to obtain photos and tweets from the listed accounts. Each participant gave us permission to look at their tweets and pictures. The tweets and photos from Twitter were retrieved using the Twitter API and analyzed locally. Likewise, the photos from Instagram were retrieved using the Instaloader API.

The images collected from Instagram and Twitter were analyzed using ImageAI [4]. ImageAI is a Python library which analyzes what types of objects exist in a given photo. ImageAI was used to find what types of objects that participants were using, how often these objects were included in their photos, and how often each object appeared for each participant. Tweets were analyzed using the python Spacy API. Spacy [7] is a Python natural language processor. Spacy was used to find the most used nouns and verbs in participants' tweets.

2.1 Related Work

It has been shown that users Big Five personality types can be determined from their social media activity [6], which is a motivation of this study for Big Five and True Color. In addition, other studies have shown that extroversion, agreeableness, and conscientiousness have an impact on the frequency of usage of social media [3] [2].

3 DATA COLLECTION

For this study, participants on two different platforms (SONA and MTURK) were given one survey. This survey collected information about password security, personality type, and social media information. To obtain the photos and tweets for this research, participants were asked in SONA and MTURK surveys for their social media account information. A subset of the group of survey participants gave Twitter and Instagram usernames. Photos were collected from these given accounts on Twitter and Instagram, and tweets were collected from accounts on Twitter for this research. We collected the photos and tweets for one month after the end of the survey. After one month, we stopped collecting data. For some users that we followed so that we can get access to their private profile (permission was provided), we unfollowed these users. IRB approval was obtained before the study was started.

4 RESULTS

There were 117 participants in total in this survey, with a total of 165 Twitter and Instagram accounts. 42% of studied images were obtained from Twitter, and 58% of images were obtained from Instagram. 65% of participants were between the ages of 18-21, 24% were between 22-40, 8% were between 41-60, and 2% of participants were older than 60. There were a total of 28,992 tweets and 5,776 photos collected from both MTurk and SONA participants. The data collection from SONA participants occurred between February 2020 and May 2020, while data collection from MTurk participants occurred from March 2020 to June 2020.

For the True Colors self-schemas, most participants (35%) identified with the Blue self-schema while participants identified the least with the Orange self-schema (12%). 32% of participants identified with the Gold self-schema and 21% of participants identified with the Green self-schema. For the Big Five personality traits, the participants were scored as follows: 43% agreeableness, 25% conscientiousness, 8% extroversion, 3% neuroticism, and 21% openness.

To determine a participant's True Colors self schema, each participant was asked to select the sentence that most closely resemble them.

- I am warm, communicative, compassionate, and feeling.
- I need to be responsible, dependable, helpful, and sensible.
- I am versatile, wise, conceptual, and curious.
- I am adventurous, skillful, competitive, and spontaneous.

The amount of photos that each participant shared on both Instagram and Twitter was analyzed in relation to their highest Big Five personality trait. As shown in Figure 1, participants who scored highest in the Openness personality type tended to share more photos on average than participants in other personality groups. This could indicate that people who tend to have more

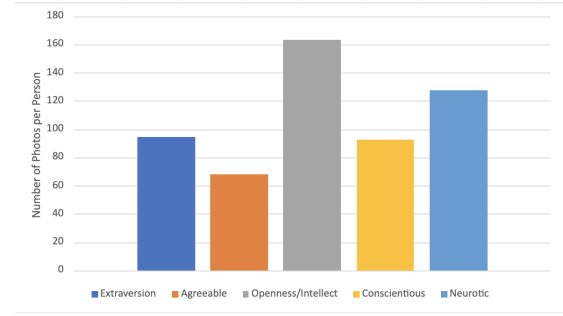


Figure 1: Number of Photos Per Participant in Each Big Five Category.

open personalities in general also are more open online with how much they share.

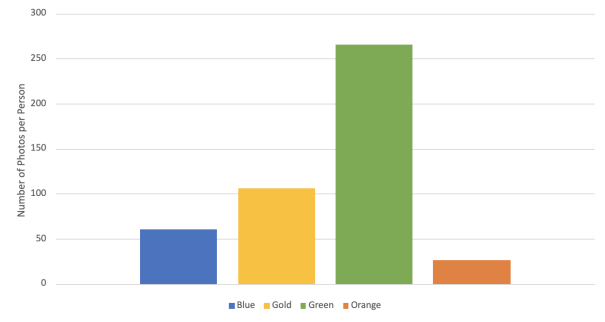


Figure 2: Number of Photos Per Participant in Each True Color Category.

Similarly to Big Five, the amount of photos that each participant shared on Instagram and Twitter was analyzed in relation to their True Color self-schema. As shown in Figure 2, participants who identified most with the green self-schema tended to share more photos on average than the other True Colors. The green self-schema was indicative of a responsible and dependable person. This could indicate that people who identify as responsible and dependable tend to share more online than people who do not. This could be because of the person's ability to appear to be in control of their life, and therefore want to share more online than others.

For every photo that participants posted on Twitter and Instagram, the number and type of objects were analyzed. The most common object found across all photos was "person", meaning that there was at least one person found in most photos. Since there were a large amount of person objects, the number of person objects was analyzed for each participant's True Color and highest ranking Big Five Trait.

As shown in Figure 3, participants who scored the highest in the Extraversion category tended to have more people objects than those in other categories. As shown in Figure 4, participants who identified with the Green True Color self schema tended to post more people objects than other self-schemas.

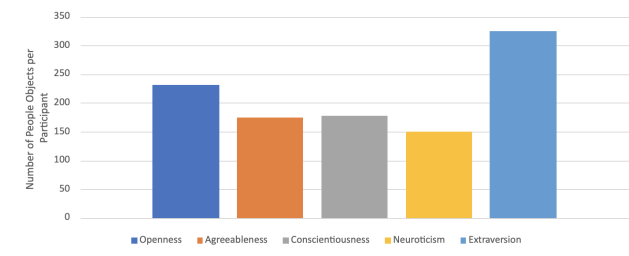


Figure 3: Number of People Objects Per Participant in Each Big Five Category.

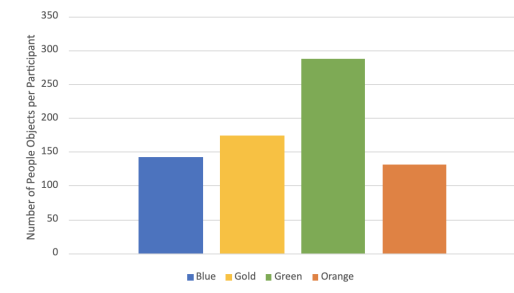


Figure 4: Number of People Objects Per Participant in Each True Color Self-Schema.

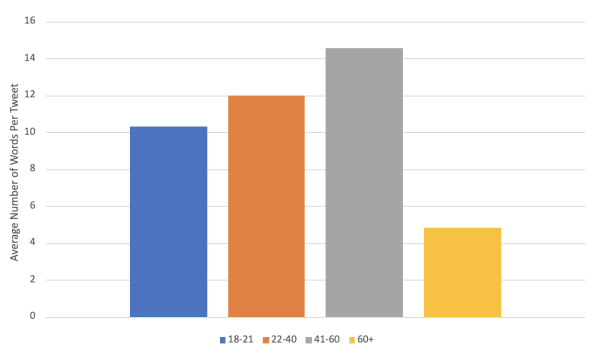


Figure 5: The distribution of Average Tweet Length per each age group surveyed.

As shown in Figure 5, participants between the ages of 41-60 tended to have more words per tweet than any other group. While this group did have slightly longer tweets than other groups, they did tweet significantly less than other groups. Participants between the ages of 18-21 had 17,785 tweets in total, while participants between the ages of 41-60 had 652 tweets. Each tweet had on average between 12 and 15 words.

5 DISCUSSION

The research conducted in this survey would benefit from a larger sample size. There were only 117 participants in this survey. Additionally, what a person may post could be influenced by social pressures rather than their personality. The correlation between

the personality and the social media posts could be accurate, but this can only be determined by further studies and more participants. In this study, there was no determined statistical significance in the correlation between social media posts and personality type. This could be due to the limited number of characters per tweet; studying another social media platform with longer posts (more words) might yield better results. In future research, more accounts and participants should be analyzed so that there can be more accuracy in the study.

6 CONCLUSION

There were 117 participants in total in this survey, with a total of 165 Twitter and Instagram accounts. Overall, this study showed that participants with Openness as their highest scoring Big Five trait tended to share more photos and people in those photos than participants in other Big Five categories. Additionally, participants who identified with the green True Color self schema tended to share more photos than participants with other self-schemas.

The relationship between social media posts and personality type would benefit from further research. Since this study did not have enough participants to reach statistically significant findings, further studies would benefit from finding more participants for the study. Our study showed that there may be a correlation between Big Five personality types and photo sharing on Twitter and Instagram. The study may benefit by having a longer period of data collection or by finding distribution methods that can reach a larger amount of people.

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