

## Personality Assessment Through Handwriting Analysis On College Students Based On Manual Graphology Analysis.

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### Abstract:

Personality is a set of characteristics in a person which is distinctive and shaped throughout one's childhood, adolescent, adulthood, etc. it is their feelings, thoughts, and behavior which is formed through various social interactions, during their development. These qualities or traits of the individual is unique to others. Similar to personality, handwriting is also unique and different for every individual. Handwriting is a kind of writing style which is unique in context of pen pressure, thickness, slant, alphabet representation, etc. certain traits found in the individual contribute to these distinct forms of depiction or characterization. Handwriting is also known as brain writing. It can be a reflection of one's patterns in line of thinking and actions. For instance, loopy and rounded letters can be an indicator of a person being imaginative, creative and having artistic traits. This study aims to bring out the importance of manual deciphering of handwriting styles and prediction of personality in everyday life while also bringing out the relevance of 'H' factor of personality [Honesty-Humility] as proposed by Ashton and Lee. We identified personality traits through specific handwriting styles and using the HEXACO Personality Inventory-Revised [HEXACO-PI-R] on a group of college students. Various forms of handwriting styles such as pen pressure, slant, baseline, etc. was taken into thought for evaluating personality traits of the subjects from the writing samples which was obtained. Following, the scoring of the inventory and interpretation of the handwriting, it was noted that there was overall 70% match between the two variables. Also, among all the dimensions, highest percentage of matches was under Honesty-Humility and Extraversion, the lowest percentage was under Conscientiousness and Emotionality. This concludes that the graphology techniques used are reliable and accurate for personality assessment through handwriting analysis.

**Keywords:** Handwriting, HEXACO, Graphology.

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## Introduction

Handwriting is simply known as the individual writing style of a person. There are multiple writing systems that produce handwritings of people. Various languages exist such as English, Tamil, Malayalam, Russian, Sanskrit, Korean, Arabic and many more and they have individual scripts that have different requirements; some have more lines that make up the letters while some require dots (.), some are rounder than other scripts, some are written from right to left, all these differences exist in language scripts. Despite these differences, based on handwriting some facts about a person is identifiable. People who are trained in handwriting analysis can determine a number of things about a person, simply by studying documents written by that person. An analyst can determine for example, if a person was intoxicated when they wrote a document, by analyzing how the person formed various characters.

Graphologists are the said analysts. They study a person's penmanship and evolution over time and it can determine various facts about a them, from whether they are being dishonest in the writing to even if they are suffering from one of several neurological disorders.

Personality is a set of characteristics in a person which is distinctive and shaped throughout one's childhood, adolescent, adulthood, etc. it is their feelings, thoughts, and behavior which is formed through various social interactions, during their development. These qualities or traits of the individual is unique to others.

Similar to personality, handwriting is also unique and different for every individual. In this study, we analysed handwriting samples to assess personality traits of a person and used a personality questionnaire to verify our graphology techniques. Graphology is multifaceted, it can be used in various settings.

### Uses of graphology:

1. Recruitment, an experienced graphologist can advise over suitability of candidates.
2. Selection processes where it can be used simultaneously with psychometric assessment.
3. Evaluating honesty.
4. Personality profiling for those needing self-awareness.

5. Historical profiling for genealogists and biographers who want to learn more about people who have died.

6. Document examination and forensic analysis for assessing forgeries and poison pen issues.

The techniques and the personality inventory used are explained in detail in the following paragraphs.

Handwriting traits analysed for assessing personality from handwriting samples:

**Honesty-Humility:** Wobbly baseline, Continuous mistakes, Too wide a space, Left margin narrowing (descending). These traits being presents makes a person Dishonest (**Antony and OFN, 2008**).

**Emotionality:** Heavy Pen Pressure, Left Slant, Loops. Presence of these places a person in the higher end of emotionality (**Amend et al., 1980**).

**Extraversion:** Writing style (large writing), Large letters, Rounded letters. Presence of these indicates Extraversion (**Antony and OFN, 2008**).

**Agreeableness:** Uphill writing, Rightward tendencies, Robust writing pressure. Presence of these traits indicate low Agreeableness (**Amend et al., 1980**), (**Esposito and Simona, 2015**).

**Conscientiousness:** Balanced upper and lower Loop in the letter: F; the two loops should bisect, Maintaining of right margin while writing, Connected letters. These traits make a person highly conscientious (**Antony and OFN, 2008**).

**Openness to Experience:** Wide loop in letter L, Open letter O's, Loopy and rounded letters. These traits make a person Open to experiences (**Amend et al., 1980**).

### Personality Questionnaire: HEXACO-PI (Revised) Self report form.

The six-dimensional model of **HEXACO model of personality structure** of the human personality was created by Ashton and Lee. It's explained in their book, *The H Factor of Personality*, which is based off of findings from a series of lexical studies. These studies involved several European and Asian languages.

The six dimensions, are Honesty-

Humility (H), Emotionality (E), Extraversion (X), Agreeableness (A), Conscientiousness (C), and

Openness to Experience (O) which denotes each of the alphabet H-E-X-A-C-O. Each factor is composed of traits with characteristics indicating high and low levels of the factor (Ashton *et al.*, 2004). The HEXACO model was developed through similar methods as other trait taxonomies and builds on the work of Costa and McCrae and Goldberg. The model, therefore, shares several common elements with other trait models.

However, the HEXACO model is unique mainly due to the addition of the Honesty-Humility dimension (Ashton *et al.*, 2004).

The HEXACO-PI-R assesses the six broad HEXACO personality factors, each of which contains four "facets", or narrower personality characteristics. (Kibeom Lee, Michael C. Ashton, Ph.D)

The six factors, their facets, and the personality-descriptive adjectives that typically belong to these six groups are as follows (Ashton *et al.*, 2007):

- **Honesty-Humility (H):**
  - **Facets:** Sincerity, Fairness, Greed Avoidance, Modesty
- **Emotionality (E):**
  - **Facets:** Fearfulness, Anxiety, Dependence, Sentimentality
- **Extraversion (X):**
  - **Facets:** Social Self-Esteem, Social Boldness, Sociability, Liveliness
- **Agreeableness (A):**
  - **Facets:** Forgivingness, Gentleness, Flexibility, Patience
- **Conscientiousness (C):**
  - **Facets:** Organization, Diligence, Perfectionism, Prudence
- **Openness to Experience (O):**
  - **Facets:** Aesthetic Appreciation, Inquisitiveness, Creativity, Unconventionality.

The study used the 60-item version of the inventory. There is a 100 or 200 items version also available. The

items of the 60-item version are not simply the first 60 items of the 100-item version. The 60 item inventory has 60 statements out of which 29 statements are reverse scored (Ashton *et al.*, 2004).

## Objective

- To analyse the physical characters of handwriting to identify psychological traits or evaluate personality.
- To find out whether the handwriting traits used are accurate in finding the personality.
- Manually deciphering personality through handwriting traits.
- To understand honesty-humility personality traits through handwriting traits.

## Methodology

225 participants who are college students took part in this study. Firstly, handwriting samples from the subjects was collected simultaneously along with the personality inventory being filled up. The HEXACO-PI-R 60 statements version was used. The statements are meant to be read carefully and marked with a number ranging from 5-1, 5 being strongly agree and 1 being strongly disagree. This is called the likert scale.

The handwriting sample statement used a specific criterion. It was made sure that certain letters were used constantly for handwriting traits to be analysed, such as letter L and O. The subjects had to write the statements four times. This is to ensure that they don't purposefully try to perfect their handwriting.

The statement used is as follows: Think of time as a rainbow agreeing to coordinate our lives according to a clock to ensure that we begin and end work at the same time. Let us see one colour of the time rainbow the same way (Elisabeth *et al.*, 2007).

Once this was collected, the inventory was scores and results were obtained for each of the six dimensions. Alongside, the handwriting samples were analysed using decided handwriting traits (Refer introduction for the traits).

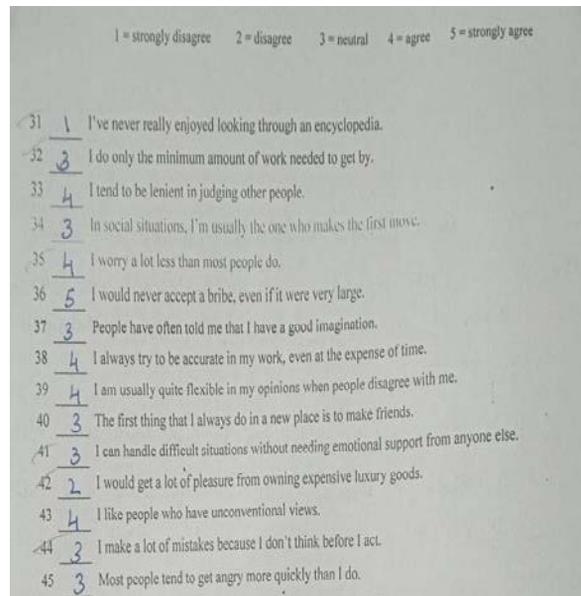
We checked for matches between personality traits through handwriting and personality though HEXACO-PI-R. Final results were obtained by calculating the total percentage and amount of matches between our graphology techniques and the personality inventory.

### Procedure for data collection:

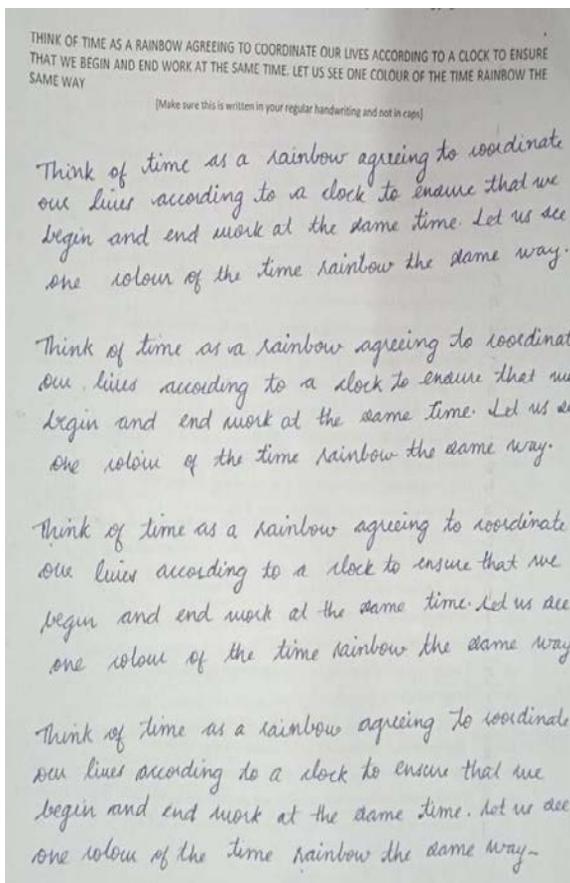
Subject is seated comfortably and given the following instruction: On the following pages you will find a series of statements about you. Please read each statement and decide how much you agree or disagree with that statement. Then, write your response in the space next to the statement using the 5-point likert scale. Please answer all the statements. Do not leave anything blank. There is no time limit but people usually complete it within 12-15 minutes. After you complete it, turn to the last sheet and write the printed statement four times. All your responses will be kept confidential.

A precautionary measure taken is that, there is a 2 minutes break given between the self- report inventory and handwriting sample.

Picture samples of how the handwriting sample and inventory scores was collected:



**Figure No. 2: The slash mark denotes reverse scoring questions.**



**Figure No. 1: Handwriting sample collected from a subject**

### Results and Discussion

Under the HEXACO-PI dimension of Honesty-Humility, out of 225 responses, it was found that there was a 79.1% match (178 responses matched) between the graphology techniques and the result of the HEXACO inventory.

Under the HEXACO-PI dimension of Emotionality, out of 225 responses, it was found that there was a 61.7% match (139 responses matched) between the graphology techniques and the result of the HEXACO inventory.

Under the HEXACO-PI dimension of Extraversion, out of 225 responses, it was found that there was a 77.7% match (175 responses matched) between the graphology techniques and the result of the HEXACO inventory.

Under the HEXACO-PI dimension of Agreeableness, out of 225 responses, it was found that there was a 73.7% match (166 responses matched) between the graphology techniques and the result of the HEXACO inventory.

Under the HEXACO-PI dimension of Conscientiousness, out of 225 responses, it was found that there was a 64.4% match (145 responses matched) between the graphology techniques and the result of the HEXACO inventory.

Under the HEXACO-PI dimension of Openness to Experience, out of 225 responses, it was found that there was a 68.6% match (155 responses matched) between the graphology techniques and the result of the HEXACO inventory.

The total percentage of match is 70.9%.

The highest percentage of matches is found in dimensions of Honesty-Humility and Extraversion. The lowest matches are found in dimensions of Conscientiousness and Emotionality.

We find that there is more than 70% match between the graphology techniques and HEXACO inventory results, hence we conclude that the manual procedure we have used can be reliable and is important to graphology.

## Conclusion

Using graphology techniques and the HEXACO personality inventory results that we interpreted, we found a 70.9% match between both. This concludes that the graphology techniques we used can be used for personality assessment through handwriting analysis, manually without the usage of any digital techniques, which we proved by cross-checking for a match between personality inventory results and graphology techniques.

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