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Prediction of software engineering careers from Instagram personality traits

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Abstract: A social networking platform named Instagram is one of the most popular platforms that we spend time on. The data from user-generated Instagram posts may be helpful to gauge the personalities of people. Previously, experiments that utilised Instagram data for personality appraisal and visualisation for professional reasons were not accessible for public usage. This research helps to recognise personality styles that are common of the Instagram culture. A computational score is generated and a model is built by using these scores in job suggestions that complement the personality of the individual. In the creation of a test score, Instagram's personality score is benchmarked against a five-factor personality model (FFPM) test score to assess how reliable it is. The statistical grade scale on Instagram personality and the FFPM test is very strong and reported 92.4%. This research will help employers identify candidates that match their company's needs by gauging their personalities.

Keywords: Instagram; personality; five-factor personality model; FFPM; software engineering careers.

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Biographical notes: B. Madhuravani has vast experience of teaching and presently working as Professor in Department of CSE, MLR Institute of Technology, Dundigal, Hyderabad, Telangana, India. She received her PhD from the Faculty of CSE, JNTU Hyderabad in 2019. She is an author or co-author of more than 40 papers in international refereed journals and more than ten conference contributions. She has published six Indian and one international patents. She was granted one patent and one copyright to her credit. She has published two books with international publishers. Her area of interest includes security, machine learning, artificial intelligence, data science, big data and wireless sensor networks.

1 Introduction

People who utilise social media have risen significantly in recent years. Social networking is a significant tool in our lives and has been very popular as well as it has helped in the advancement of modern technology. The most current popular social networking channels include Instagram, Twitter, YouTube, LinkedIn, Facebook, and Google Plus. After the Instagram was released in 2015, India has seen a steady increase in its users. There were registered to 80 590 000 users in January 2020. The bulk of them were males 72.7% and females 27.3% with highest age category of 18–24 yrs of user group (38,700,000). The largest disparity, out of all the other differences found in all the different age ranges, becomes more notable in the 18 to 24 age range edits (Green and Henseke, 2020).

Personality is characterised as the distinctive characteristics of an entity, including his or her positive and negative emotions, opinions, and behaviours. Personality styles are too special for them to be replicated, apart from suggesting that they're distinct from most individuals. Personality helps one to truly see and understand someone's individual emotions, responses, and emotions in various circumstances and experiences (Changchit et al., 2020). In order for individuals to act differently in similar environments, they do not have the same personalities. If you choose to evaluate someone's personality the typical means utilised are personality assessments. When an examinee answers a personality questionnaire, he/she ('s internal cognition') tests himself based on pieces of knowledge, wherein each object depends on a certain feature of the examinees' actions (Hogan and Sherman, 2020). The five-factor personality model (FFPM) questionnaire is a 44-question personality inventory that has been utilised in several academic studies. In this exam, the individual is required to answer questions to measure their personality. However, a stressful major five personality examination is a long and rather repetitive assessment of a user's personality. The one big draw back to the FFPM test is that people would prefer not to provide truthful answers to the survey queries, thus culminating in a slanted value against the FFPM test (Cooper et al., 2020).

Personality by itself is one of the key factors that is used to choose a job choice for others who are pursuing a career. Study that mainly focuses on attitude assessments for selecting work matches does not rely on online scenarios. Ignoring the mapping of social network data is a poor approach. Right now, there's no way to instantly align the required occupations of personality styles on Instagram. But it is being worked on. Certain attitude characteristics are almost as critical in having someone find a job as the academic experience that they have or the abilities that they have (Dandannavar et al., 2020, Sai Prasad and Pasupathy, 2020).

The study's useful benefit is its potential to quantify the personalities of Instagram users. This insight may be very important with respect to knowing and forming a professional connection with individuals. Using an Instagram personality testing app, which users respond to via a questionnaire. Users are then portrayed with feedback and advice that suit their personality. The present research, which involves collecting user's data like images from Instagram, will help us to handle such the model of user's personality (Vaughn et al., 2008). A ranking system computes the Instagram personality scores of an individual dependent on Instagram characteristics. Individuals are then scored on each of these boxes. The aim of this study is to assist users in deciding on their

potential professions as a software engineer through gauging personality via social media. Based on this information, users can select more appropriate career paths. The survey findings obtained for the intervention process of the Instagram personality trait (IPT) for a group of 25 and 50 subjects were very reliable, respectively.

2 Related works

The usage of social media is a crucial way to get in touch through pictures and quick messages. Instagram is a very famous social network that has a community of over one billion users. Instagram is a social networking software that helps the users to change their status, have comments on others' status, post images, enter communities and engage other events. A prior study suggested that Instagram features would test whether an individual is introverted or extroverted (Jennewein et al., 2020). When a person takes an uploaded picture, shares it on Instagram, or enters a community on Instagram, we can get insight into their personality. Past experiments have found that each of the five main characteristics of personality that is addressed in the five-factor model shows a favourable or negative correlation with Instagram functionality. Instagram can be called someone's identity or representation upon themselves, such as their likes, pictures, and communities they are in (Capretz and Ahmed, 2010).

Although the seven features chosen within the present sample, which involve mates, albums, wall messages, likes, tweets, pictures, and groups were selected on account of their high use, not all of these features were reflected by each film. According to the study by, people who like to update their social media status, post photos, join communities, and like other peoples' notifications are more open-minded (Wee et al., 2017). Past research found that extremely extroverted persons had multiple mates on their Instagram pages. Many that exhibit a strong degree of extraversion are likely to engage with others and have enhanced connections with others using Instagram communities. The phone users who appear to be extremely diligent share less photos/videos than phone users with poor conscientiousness. Those that have a strong rating of agreeableness are often the ones who post a constructive message. It seems that Instagram users who are strong in neuroticism prefer to use terms to convey negative emotion and frustration in their status updates (Branz et al., 2020).

Personality is normal to be predicting by a variety of various personality types. These include the FFPM, the Holland model, and the Myers-Briggs form predictor. The Myer-Briggs type indicator (MBTI) is a common instrument used to quantify and classify individual personality styles. In addition to the initial four letters of the Enneagram model, the MBTI model adds the extraversion (E) and introversion (I) types, the sensing (S) and intuition (N) characteristics, the thought (T) and experiencing (F) preferences and the assessing (J) and perceiving (P) styles. Holland's model and the MBTI model neglect the understanding of neuroticism in predicting personality. While Holland's model generated 12 diagnoses and MBTI produced 16, the FFPM created more diagnoses. Psychologists usually believe that there are five main components that make up a person's personality, namely, and the FFPM has five aspects of personality that comprise the responsiveness of knowledge (O), the conscientiousness (C), the extraversion (E), the agreeableness (A), and the neuroticism (N) (N). Individuals that identify with transparency are imaginative, curious, and hold uncommon concepts (Seibert and Kraimer, 2001).

Those people who have large volumes of conscientiousness are typically self-controlled, hardworking, well-organised, and concentrated on their specific objectives. People that are known to have elevated levels of extraversion appear to be relatively active, assertive, and enthusiastic. People who are big on 'agreeableness' are kind, supportive, sympathetic, and cooperative. And those that have elevated levels of neuroticism appear to be nervous, insecure and quickly de depressive. Past study has utilised individual personality characteristics with various recommender programs (Jensen-Campbell et al., 2010). A recommender framework, one which helps the consumer make choices in a difficult situation, is welcome. Personality (mild, moderate, and aggressive) is applied to individual purchasing choice, philosophy, inner thought, and other marketing relevant influences. Customers can wish lists that are included in an online framework while ordering, and are then used to select goods and services that fit the buyer's demands and expectations. If you are searching for a good recommender method, search for one that is maybe based on one of these categories: online dating, gift recommendation, music recommendation, or movie recommendation. They played the personality in combination with job advice, and noticed they reached a higher rate of effective postgraduation. In the past, pressure organisations have built ways to accomplish their recruiting targets in human resource management (Morgan, 2020).

The recruiting method is also used by organisations to limit down the number of applicants to choose. Internet job repositories such as Monster.com and Quikr.com offer resume submissions; these services use the requirements of, comprising of, including, or consisting of, workers' abilities, expertise, qualifications, preference, income, or some variation of these. Rather than simply over-assessing skill-sets, e-recruitment platforms enable you to connect applicants with unique positions by keywords that describe the criteria. One of the advantages of using social media to attract potential hires is the opportunity to extend experience acquired when looking world-wide for applicants online (Petruzziello et al., 2020).

Social networking has (become) an easy and economical way for employers to conduct background screening on those who are pursuing a job. According to the *Jobvite US Social Recruitment Study 2019*, 92% of companies in the USA are using social networks or sites for recruitment, with Instagram application of 41%. By looking at the social network profile of the applicant, employers can obtain additional details that was not picked up by the interview, like the candidate's personality. Employers take psychological assessments to assess the personality of a candidate. Conversely, job hunters prefer to use social networking platforms to look for further openings throughout their career. However, job applicants also tend to project perfect characteristics in their responses to complement the characteristics they have targeted. Since you cannot decide who is genuinely 'mean' or 'nice', particular personality scores are not as accurate. There is also a faster approach to test a person's personality by utilising social network data instead of the conventional way of assessing personality through long term evaluation. Instagram has a higher use rate in India relative to other countries. Thus, the present study uses Instagram as the main medium used for publicly accessible details. Being in various career fields can involve different personalities (Al-Otaibi and Ykhlef, 2012).

Based on the results of this analysis, software engineering professions are chosen as the output for Instagram personality results produced by the method. The FFPM and software engineering categories are identical in thought and position description, which were mapped through knowing both the personality and skills needed for various categories of the software engineering professions. Table 1 displays the various types of

software engineering occupations and their associated degrees of personality characteristics in the FFPM. There are a total of six occupations that involve software engineering, there are management engineers, requirement engineers, system engineers, programmers, testers, and evaluators (Christensen et al., 2020; Thulasi Chitra et al., 2019; Reddy et al., 2019).

Table 1 Software engineering careers and the FFPM

Agreeableness	Low	
	Medium	
	High	Requirement engineers
		System engineers
		Programmer
		Management engineers
		Evaluator
		Tester and implementer
Conscientiousness	Low	
	Medium	Management engineers
		Tester and implementer
		Programmer
	High	Requirement engineers
		System engineers
		Evaluator
Openness to experience	Low	Requirement engineers
		System engineers
		Programmer
	Medium	Management engineers
		Evaluator
	High	Tester and implementer
Neuroticism	Low	Requirement engineers
		System engineers
		Programmer
		Management engineers
		Evaluator
		Tester and implementer
	Medium	
	High	
Extraversion	Low	System engineers
		Programmer
		Management engineers
		Evaluator
	Medium	Requirement engineers
		Tester and implementer
	High	

Personality characteristics can be collectively defined as a 'low', 'medium', and 'high' trait stage dependent on; these levels can be referred to as 'low', 'medium', and 'high' respectively. Based on Table 1, the software developer occupations that are appropriate for people who offer a strong score for agreeableness are not suitable for people who give a low score for neuroticism. As it points out, individuals who are high in transparency (PT and agreeableness) are the most suitable people for research and applications, whereas folks with low scores are better fit for jobs as requirement developers, machine engineers, and programmers. The occupations and personality are interrelated and may not cater for recognising the characteristics of a specific individual in 'Instagram' images. As a result, we were able to map Instagram parameters that affect the characteristics in order to obtain the Instagram personality ratings (Maíquez Cascant, 2020).

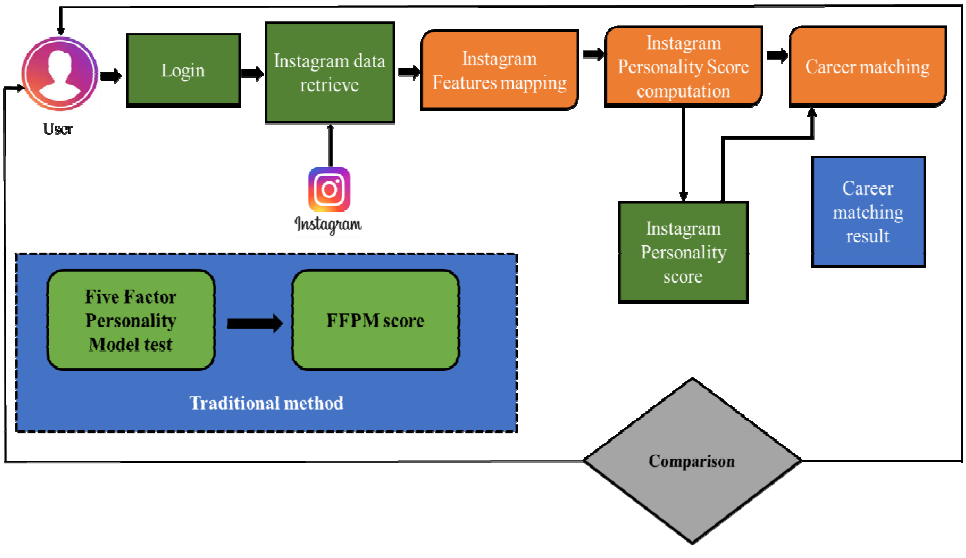
3 Methodology

The basic aim of this research is briefly explored in this portion. Each box reflects the instrument (IPT) that will help determine the current profession. The practical process for advising on social networking platforms and social media applications is focused on the measures for retrieving Instagram data and acquiring the participant's IPT. In order to view the data from the survey respondents 'signed in' to your software on Instagram, which needs authorisation for her/his/your applications that gather data from the respondent's account. When we log in, the machine automatically collects data in numeric form. The data collected were pulled via the Instagram PHP Software Development Kit (SDK). The data is obtained from Instagram by utilising resources, such as the Instagram App Development Kit, the Instagram API, the Graph API explorer, and the Instagram Query Language. The SDK is one of the origins for accessing Instagram server-side API calls. Marking our sample was performed using Instagram PHP SDK for data extraction (Kim, 2018).

The consumer is equipped with the ability to retrieve and store data such as the amount of collections, wall messages, views, contacts, and others. These findings would subsequently be translated into the FFPM. Their personality is then measured after addressing the survey. We have an algorithm to calculate the sum of Instagram posts from the patient to determine the number of posts that one would be for IPT. The respondent's IPTs for each component of the FFPM (openness, conscientiousness, extraversion, agreeableness, and neuroticism) will be measured and shown in percentage form. It was therefore determined that the IPT would be applied in the recruiting process. Table 1 shows the association between the FFPM and the best professions for software engineers, but which of the careers mentioned is the best one for the respondent's personality? Besides evaluating their Instagram personality via the online personality survey, they were also tested on their personality using offline MBTI assessments. The FFPM personality score (FFPMPS) will be calculated based on scores collected in the personality exam (Rozgonjuk et al., 2020). In comparison to the FFPMPS, the IPT would be contrasted with the FFPM test. The personality outcome of the FFPM test shall be benchmarked against the Instagram personality.

The data provided in the analysis was compiled using a process that allows for purposive sampling. Fifty people were polled and 48% of them were women and 52% of them were men. A stratified group of 2000 undergraduate and postgraduate engineering students across India has been surveyed on the usage of Facebook for tracking students. The students who did the research were between the ages of 20 and 30. Many of the respondents have an Instagram account which they use frequently in their everyday lives. To do the computer work from the Instagram study, the same respondent group who completed questionnaires on personality traits were issued another questionnaire to complete. The process(es) illustrated in Figure 1. One shall be clarified in considerable detail. The FFPM, a series of measures for psychometric programs, the IPT exam, and job matching will all be explained in the following subsections.

Figure 1 Conceptual process flow of career recommendation using Instagram personality scores (see online version for colours)



3.1 Computation of IPT and career matching

3.1.1 Feature mapping

A machine that can identify and distinguish pictures can begin by analysing the relations of the five dimensions of personality traits and their different social features, including the number of albums, wall messages, likes, follows, friends, comments, and images. Can be used to see how two features affect the personality characteristics, one that of the Instagram pics, and/or the other function that of the Instagram's account owner.

Table 2 Relationship between each Instagram feature and the FFPM personality traits

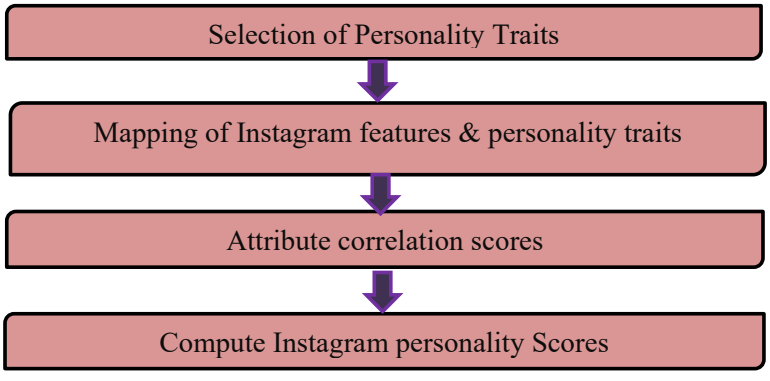
Instagram feature with weightage	*Agreeableness*	*Conscientious*	*Openness to experience*	*Neuroticism*	*Extraversion*
Photos/videos (6)		+ (Vaughn et al., 2008)	+ (Vaughn et al., 2008)		+ (Changchit et al., 2020; Dandannavar et al., 2020; Morgan, 2020)
Comments (5)	+ (Dandannavar et al., 2020)				+ (Dandannavar et al., 2020)
Library (4)	+ (Dandannavar et al., 2020)			+ (Dandannavar et al., 2020)	+ (Dandannavar et al., 2020)
Stories (3)					
Followers (2)	+ (Dandannavar et al., 2020)	– (Dandannavar et al., 2020; Vaughn et al., 2008)	+ (Vaughn et al., 2008)	– (Hogan and Sherman, 2020; Dandannavar et al., 2020)	+ (Green and Henseke, 2020; Changchit et al., 2020; Hogan and Sherman, 2020; Cooper et al., 2020; Dandannavar et al., 2020; Vaughn et al., 2008; Jennewein et al., 2020; Jensen-Campbell et al., 2010; *Jobvite US Social Recruitment Study 2019*)
Likes (1)	– (Vaughn et al., 2008; Jennewein et al., 2020)	– (Vaughn et al., 2008)	+ (Vaughn et al., 2008)	+ (Vaughn et al., 2008)	

A positive sign implies that the body language of the personality who used Instagram has positive association with features on Instagram, while a negative sign means the same for the personality who used Instagram. The numbers inside the brackets, such as (20), represents previous studies in measurement which discovered the existence of the relationship between Instagram features and personality traits. Table 2 reveals that a rise in the number of albums is correlated with an increase in extraversion, agreeableness, and neuroticism. The patient has a large number of albums and a difficult to diagnosis disorder, that's characteristic of high levels of extraversion, agreeableness, and neuroticism. The number of wall posts has a strong connection to a person's openness to experience. People who prefer lewd and crude videos are found to be accessible to experience, however for other characteristics, they are more conscientious, conscientious people are found to have a detrimental association between likes and agreement ableness. High ratings of extraversion and agreeableness, both of which are outgoing, contribute to an aspiration for a high number of mates (Havill et al., 1998). Nor are those who tested high in neuroticism successful at holding a broad social circle of friends surrounding them. From this finding, it can be deduced that individuals with a high degree of neuroticism do not have many contacts on their social network site. All things considering, there is a favourable association between openness to experience and extraversion, as well as a detrimental relationship between openness to experience and conscientiousness. Table 2 shows that/it seems that a rise in the number of comments seems to contribute to a decline in animosity and agreeableness.

3.1.2 Computation of IPT

IPT computation follows feature mapping. A proposed scoring mechanism calculates Instagram personality. A few steps are implemented for such calculation (see Figure 2). Figure 2indicates that the personality traits are selected by first agreeing on the psychological variables in the five factor model. Attitudes, which are the five characteristic characteristics, are openness, conscientiousness, extraversion, agreeableness, and neuroticism. Personality characteristics and Instagram attributes were analysed in this analysis, and are seen in Table 2. There is a good or detrimental association regarding Instagram functionality and traits or personality. Once various Instagram data has been retrieved, a numeric scale is set. It varies from low to large (in terms of functionality sets) (as shown in Table 3).

Figure 2 Steps for Instagram personality score computation (see online version for colours)



After the reliability was determined, scores were assigned using a Likert ranking from 1–3, and IPT was computed. There is a computed item (IPT) that is provided in the form of percentages to show how often the personality traits of the respondent who replied positively varied from the average for an individual with low, medium, or high levels for these personality traits. High IPT may be a strong personality characteristic. The IPT estimation is done for each of the five personality characteristics in the FFPM. The device is able to retrieve Instagram's data in the numeric type. Thus, data may not have to be taken and assigned as low-, medium-, or high-risk groups. This links the personality type (i.e., extraversion, agreeableness, conscientiousness, feeling, and intuition) to the FFPM (Al-Otaibi and Ykhlef, 2012). In deciding whether or not to categories the characteristics, three ranges were set and the Instagram function range is calculated using formula (1):

$$\text{Range of Instagram feature} = \frac{\text{Each fature highest number} - \text{Each fature lowest number}}{3} \quad (1)$$

The sum of each Instagram features is collected from all respondents and averaged based on formula (1). The range of numbers for each Instagram feature is set and summarised as shown in Table 3.

Table 3 Instagram feature range for each software engineering student

Instagram feature	*High*	*Medium*	*Low*
Photos/videos	Above 7,000	6,999–2,551	Below 2,500
Comments	Above 300	300–151	Below 150
Library	Above 30	29–15	Below 15
Stories	Above 100	99–25	Below 25
Followers	Above 100	99–25	Below 25
Likes	Above 501	500–251	Below 250

Table 3 is intended to display the ranges for use of the Instagram function, centred on the limited and moderate features included in the software engineering student population. Through categorising and finding the Instagram ranges of all the extracted features, we may establish a categorisation scheme with classes that signify the type of the examination. The association between a subject's right and left-hand scales was calculated using a Likert scale that ranges from 1 to 3. The Likert scale is a questionnaire that tests 3 degrees that are (1: low, 2: medium, and 3: high). As an example, a function in the low range would have a value of 1 for the low range, 2 for the middle range, and 3 for the high range. Even if the respondent has tons of friends on Instagram, Instagram finds the inter-friend reciprocal function to be significant only when the amount of the reciprocal friend count is reasonably big. When this is achieved, the score will count in the opposite direction. If the function contains a – feature [e.g., like a (crossed out), the score is spread in a reverse way, i.e., F. Differences in the degree of the characteristic conscientiousness will actually be observed. If a respondent only has 200 likes on their Instagram site, the range comes under the low range. Therefore, the ranking will be rated as 3. The IPT is determined after assigning a correlation ranking. Based on the suggested

formula (2), each characteristic is exhaustively computed. Thus 'IPT' is uniformly computed.

Both aspects of a single individual appear to be substantially different from other individuals, and all assessment methodologies relative to the personality attributes have much error bars. *i* reflects the complete summation of variables. R represents an indexed variable of each successive word in the sequence, and it corresponds to the scores the classifier gives to each function. Look over here at Table 4. It gives an overview of how a personality attribute is calculated based on the derived Instagram info. In order to derive the features of agreeableness from the Instagram API, I used a tweety analysis program, where using samples from the Geo Data API, which was collected with demographic and common Instagram events from all over the world. The resulting model summarised the relationship between agreeableness and the Instagram features.

$$\text{Instagram personality score of X trait} = \sum_{i=1}^{n} \frac{\left(x_1 + x_2 + \text{B} + x_i\right)}{3} \times 100 \tag{2}$$

n number of Instagram features exist relation with the particular personality traits

i the index of summation

x an indexed variable of each successive term in series and refers to the scores given for each feature.

Table 4 shows an example of how a personality trait is computed based on the extracted Instagram data. We have selected the agreeableness trait from the FFPM, where the relationships between agreeableness and Instagram features are extracted as shown in column 2, and column 4 shows the correlation scores according to the range of each feature.

Table 4 Sample personality traits for conscientious of a respondent

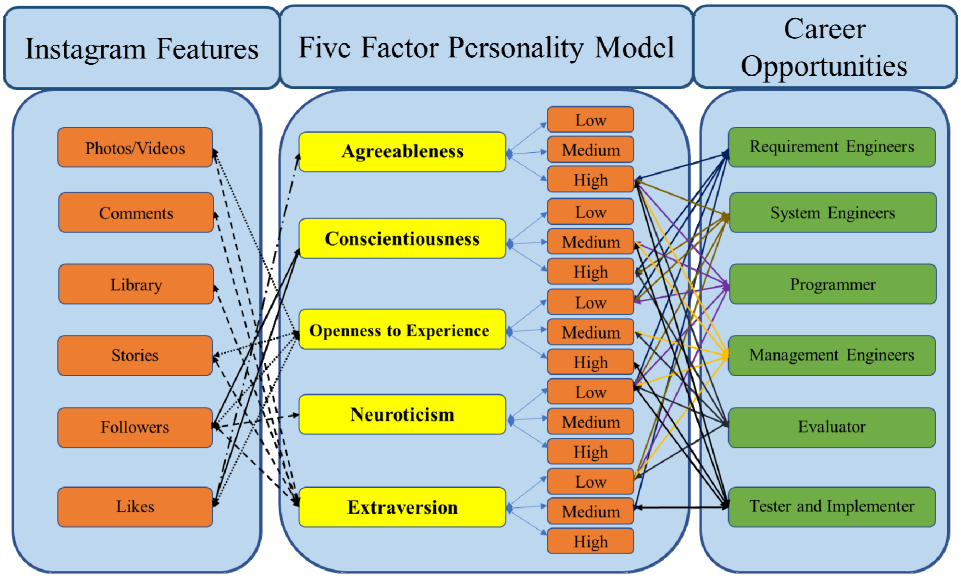
Instagram feature	*Mapping of conscientious*	*Range*	*Correlation scores*
Photos/videos	(+) positive	High	3
Comments	Not related	-	-
Library	Not related	-	-
Stories	Not related	-	-
Followers	(+) positive	Medium	2
Likes	(–) negative	Low	1

Table 4 (just look at the 4th row) shows us that Instagram features such as albums, likes, contacts, and comments contribute to the 'agreeable' personality characteristics of the user. The good aspects of this method are granted scores in the general 'forward' direction, while the similarly bad elements are assigned scores in the opposite 'backward' direction (negative). From the content written through Instagram, the respondent exhibits an agreeableness of 83% from their Instagram results. From this ranking, it can be inferred that this respondent is a rather agreeable individual. According to the findings in this report, the results below 40% are regarded as belonging to the low stage and considered as threshold, whereas the results above 65% are considered to belong to the high end. The remaining roles shall be ordered at a medium level.

3.2 Model

A chart of Instagram professions was generated using a model to forecast software engineering careers. The model illustrates how functionality of Instagram can be related to the FFPM and to software engineering professions. This research is a significant contribution of the social psychology studies of Instagram in the creation of a modern paradigm for personality identifications and digital engineering job recommendations. In this post, we explain the relationship between the Instagram features and the personality characteristics based on this five factor model. The study reveals that predictive model of five factor personality styles will describe specific occupations up to 99.0% accuracy in software engineering (Zuckerman et al., 1993).

Figure 3 Model that maps Instagram personality and software engineering careers (see online version for colours)



In addition to the Instagram functionality, the five factor personality templates, and the software engineering professions, the model is asserting that there may even be a partnership between the ICT careers. Instagram is a product of the seven most commonly utilised elements, while the FFPM feature comprises of five involving extensively each of the five factor personality characteristics of sensitivity to knowledge, conscientiousness, extraversion, agreeableness, or neuroticism. We assessed the individual's picture attributes before casting their personality into a tub. Each function is associated with a certain group of personality characteristics, either more favourably or negatively (see Figure 3). The 3.5/10 suggests a straight line ties a related Instagram feature and a specific personality attribute, which implies a good partnership. Note that a dotted line is there, this means the reverse. The indicator that the community trait is positively linked to openness to experience in the FFPM is indicative of feeling contentment, while the indication that the likes variable is negatively related to conscientiousness is indicative of a bland, 'easy' personality. The importance of the association between personality characteristics and Instagram features has been well

established (Section 3.1.1). To maintain better partnerships with your peers, you would recruit for more in-depth expertise that is required to complete your positions as a software developer, management engineer, necessity engineer, device engineer, programmer, tester and implementer and evaluator. Each one of these lines reflects a particular profession. The medium degree of exposure to experiences indicates the individual is high in imagination. The person may be a suitable management engineer.

3.3 Career matching

In testing determine if Instagram users are extroverted or introverted, we now would suggest the top three occupations that better suit the picture of becoming extroverted or introverted (see Figure 3). Based on the number of samples taken from the five social prototype collections, it can be calculated that the respondent is 59% openness to experience, 68% conscientiousness, 31% extraversion, 89% agreeableness, and 34% neuroticism. This individual has a degree of extraversion of low as well as high levels of responsiveness to knowledge, conscientiousness, and neuroticism, yet he/she has a level of agreeableness that is higher than the average. The partnership between the FFPM and software engineering occupations shown in Table 1 is cooperated to balance the most appropriate profession for the respondent. Note that there could be fewer than five choices. Any responses would be selected depending on the degree of personality characteristics possessed by the respondent in order to help them make informed career decisions (King et al., 1996). There are six software engineering occupations included within this report, and they are management engineers, machine engineers, necessity engineers, programmers, developers and implementers, and evaluators. The framework is going to attempt to map human personality outcomes for information engineering occupations. Figure 3, it can be concluded that a respondent with a medium degree of transparency is ideal for jobs as a management engineer, but not an evaluator. The individual who is wise enough to aim for excellence and produce high-quality goods is the boss, programmer, tester, and implementer. If you have low levels of extraversion, you may be ideal for occupations including management engineer, device engineer, programmer, and evaluator. It turns out that all six computing occupations are suited to the strong agreeableness of the respondent. All of the programming professions are appropriate for individuals who don't have elevated levels of neuroticism. The three most desirable professions propose to the respondent are focused on the frequency of careers that complement the personality organised. Jobs are more organised within the category like those are the most common type. The occupations that are deemed close are to be sorted further. When the term 'management engineer' is used four times in sequence, you get the word 'engineer'. Programmer is the second rated person and evaluator is seventh. Figure 3 gives a preview of a career match showing a match outcome.

3.4 Traditional approach

3.4.1 FFPM test

In previous experiments, a measure named the FFPM has been used to classify an individual's personality. Based on the findings of the FFPM exam, the secretary determined that 44 questions be grouped into five personality domains (openness, conscientiousness, extraversion, agreeableness, and neuroticism). The FFPM test used a

1–5 rating scale which ranged from 'strongly disagree' to 'strongly agree'. The assessment was achieved by taking the highest score from the last 30 ratings explaining discomfort, coughing, breathing, feelings encountered during the test, inconvenience, scent, and approval of the substance (Völkel et al., 2020). The FFPM test outcome was calculated by combining the scale scores of objects in each personality domain and shown in the final result in percentage. The personality appraisal questionnaire mentioned in this article is performed the same as the Instagram personality test where answers are rated from 1–5. To decide if a respondent is low, medium or high level in a specific personality domain, we consider those below 40% as low and threshold level, those above 70% as high, and those from 40% to 65% as medium level.

Table 5 Computation of scale score using FFPM test

Personality traits	*Corresponding questions*
Agreeableness	2(R), 7, 12(R), 17, 22, 27(R), 32, 37(R), 42
Conscientiousness	3, 8(R), 13, 18(R), 23(R), 28, 33, 38, 43(R)
Openness to experience	5, 10, 15, 20, 25, 30, 35(R), 40, 41(R), 44
Neuroticism	4, 9(R), 14, 19, 24(R), 29, 34(R), 39
Extraversion	1, 6(R), 11, 16, 21(R), 26, 31(R), 36

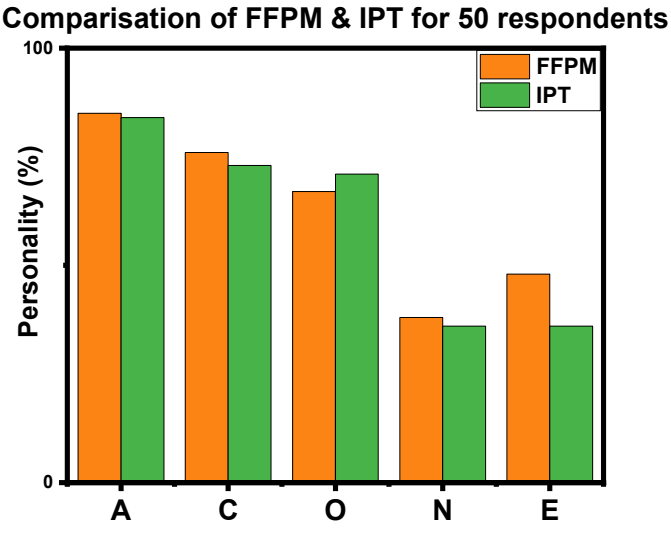
Note: 'R' represents reversed item, where the scale score is counted in reverse fashion.

In Table 5, a number, which reflects the number of objects, from the table, stands for an object that is positive, and a 'R,' which stands for reversed. 'R' reflects the reverse-scored objects where a scale score is given in the reverse manner, that is, a score of 1 becomes 5, 2 becomes 4, 3 stays 3, 4 becomes 2, and 5 becomes 1. The score that each participant gets for a specific query is linked to the set of personality characteristics suggested by the statement in question. As can be seen on the chart, it makes sense that the eight questions that are questions with the number 4 and 9R belong to the category for neuroticism, so these questions are questions filled with questions regarding neuroticism. By collecting how much of an impact are psychological influences on a person's welfare, a result of a quantitative expression is calculated by adding and dividing scores from several elements of a continuum of psychological factors. Based on the cumulative total of the positive answers, the average score of the questions in a category of the personality domain is the personality value and the same procedure is extended for the four remaining personality domains (Oltmanns and Widiger, 2020).

3.4.2 Comparison

The calculation of the IPT and the FFPMPS is contrasted, to assess the dominance of the linear models compared to the quadratic models. Both of the personality characteristics are assessed using the five previously described traits, which have a scale from 0% to 20%. This Instagram accounts reveals that perceptual test is very successful at identifying personality and that they can do so very reliably by Instagram use. Figure 4 shows a demonstration of the contrast of the face and the profile of the person. Here is the illustration of a correlation of five factor personality score and Instagram personality score for a single human.

Figure 4 Comparison of FFPM and IPT (see online version for colours)



Notes: Representation: A – agreeableness, C – conscientiousness, O – openness to experience, N – neuroticism, E – extraversion.

4 Experimental results and discussion

4.1 Instagram personality trait

The research addressed the experimental outcomes of the interviews and the FPFPS of 50 respondents with a software engineering background. Their Instagram pictures are examined to evaluate the various identities of the people. The IPT of a respondent is the sum of openness to experience, which is 59%, the percentage of conscientiousness, which is 68%, the amount of extraversion, which is 31%, the amount of agreeableness, which is 89%, and the percentage of neuroticism, which is 34%. The answers on the survey showed that the respondent dropped in the medium range for responsiveness to experience, conscientiousness, and neuroticism; in the low range for extraversion; and in the high range for agreeableness. The personality questionnaires not only reveal patient's degree of personality, but also their tendencies by having numerical rating from 0 to 100% for five personality traits.

Figure 5 and Figure 6 describes the FFPMPS of a respondent. The respondent managed to achieve 68% openness to experience, 71% conscientiousness, 42% of extraversion, 86% of agreeableness, and 39% neuroticism. The FFPMPS is equally calculated as the IPT.

Figure 5 Sample IPT score of an individual (see online version for colours)

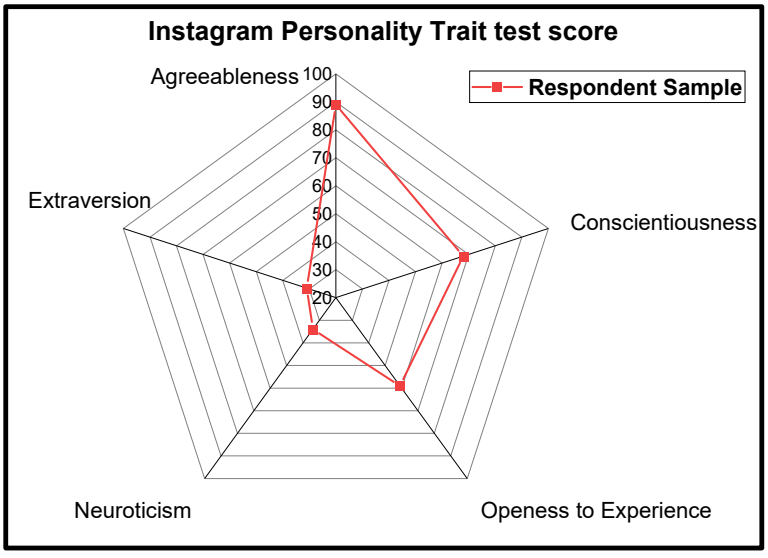
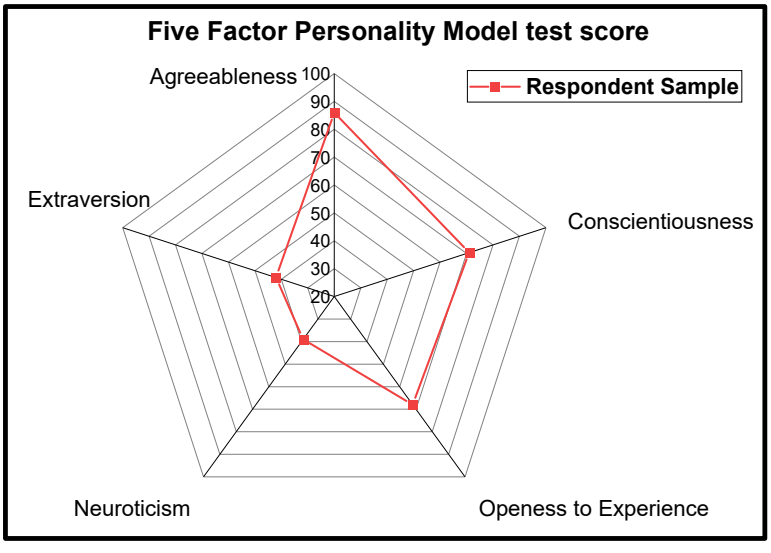


Figure 6 Sample of FFPM scores of an individual (see online version for colours)



4.2 Comparison of scores

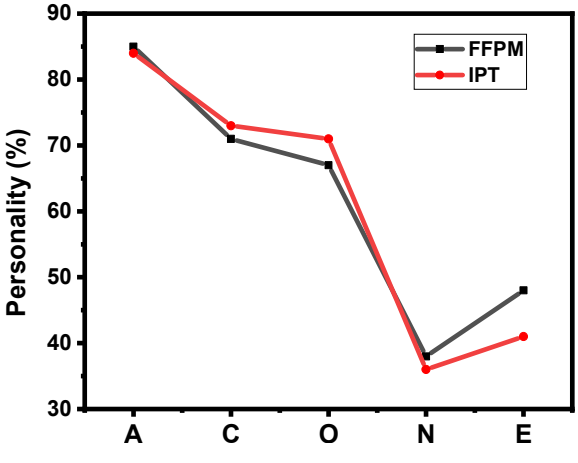
In determining whether a filter system or a detailed format is easier, we will analyse the discrepancy between Instagram and the FFPM examination. Compassion is seen to be a consideration in the feelings of the citizens who answered two out of three questions which shall be discussed more throughout the following pages. By presenting a result in graph style you offer the patient a clearer picture of how their conditions improve and

how their habits change. You can get additional evidence to continue your study with the sample size rise. This analysis was able to provide us with a good view of the actions of Instagram users to forecast Instagram users' characteristics. Both the survey findings and the personality profile questionnaires include further detail on the respondent's personality via Instagram and the FFPM examination.

4.3 Twenty-five respondents

From Figure 7, we can say that personality characteristics measured using Instagram display a close trend to the FFPMPS. The FFPM percentage scores for the FFPM test was better in percentage than the scores for the Instagram test, except for transparency. This result suggests people exchanging details more freely on Instagram, as opposed to the FFPM survey. A research from 2008 provided convincing proof that people who have so much time to devote on social networks are more accessible to interactions online than people who aren't on social networks much. A separate research conducted by Instagram users showed that those higher on conscientiousness invested fewer time relative to those lower on conscientiousness. Other personality characteristics, such as extroversion, agreeableness, and neuroticism, were not found to influence social media use. Because such features were not found to influence social media usage, researchers concluded that their lower ratings would make them have a lower influence on social media use (based on Figure 7). It is thought that 8 out of a hundred individuals would become a potential suicidal psychopath with an average ranking of 58.46% from Instagram and 63.75% from the family FFPM exam. The IPT accuracy is determined by taking the average personality score for Instagram, and dividing it by the average big five inventory test score. Thus, the test performed using the IPT has an average accuracy of 91.7%.

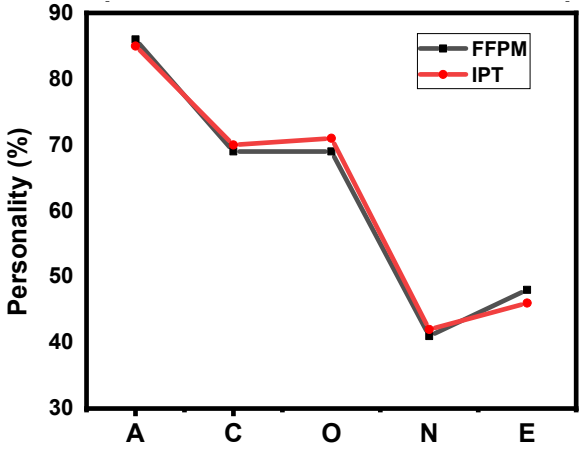
Figure 7 Mean comparison of IPT and FFPMPSs of 25 respondents (see online version for colours)



4.4 Fifty respondents

The IPTs and the FFPMPSs gave a total number of 50 as a percentage score. The average highest personality score for Instagram is 59.29% and the average highest personality score for FFPM test is 64.15%. Taken together, the IPT senses wireless radiation at moments where it is likely to pose a possible danger. As the survey size grew, the percentage of correctly remembered responses increased from 91.7% to 92.4% as the opportunity to receive the same incorrect answers increased from 30 to 50 voters. A survey of 30 individuals was used, but 50 was used for the second sample size of answers. Two descriptions of the trend and shifts of personality can help explain the impact as a population grows. If the N respondents perform equally under the two samples sizes, we may predict that respondents from a greater group from the same likelihood would also have the same outcomes. As the other studies, we can see the ratings of the two types of patients have the same trends (see Figure 7 and Figure 8). For if the sample size grows bigger from 30 to 50, the position of the location of the personality scores for the 50 individuals is identical and compatible with the samples that came before. The same claims were present in the case study findings for the case of transparency where the FFPM scored marginally better results. With the improved assessment of the analysis, results indicate that the same findings of for both the FFPM and the IPT remain the same. Therefore, the sample size the research utilised is justified for the analysis.

Figure 8 Mean comparison of IPT and FFPMPSs of 50 respondents (see online version for colours)



4.5 FFPM and IPT metrics

The researchers used a personality score to construct a personality forecast dependent on Instagram use. Orthodox ways of forecasting personalities can be distinct from determining an individual's ranking. This analysis looks at Instagram data, a common social networking site, as opposed to FFPM data, which is used to determine an individual's personality. Here is a Table 6 summarising the variations.

Table 6 Comparison of FFPM and IPT

FFPM	*IPT*
Appeal participant to answer a survey of 44 questions	Appeal participant to use the implemented system to retrieve publicly available Instagram features
A score scales from 1 to 5 (Strongly disagree to strongly agree)	Likert score scales from 1 to 3 (low, medium, high)
Accuracy depends on participant honesty	Accuracy depends on participant's activeness in Instagram

The computation of the four factor clinical personality tests indicates the personality effects (in percentage) for five personality characteristics in the FFPM. All in all, while the FFPM test's findings can you work as openly as you would like, you should be considerate when providing your answers. Additionally, the Instagram system varies from the old-fashioned finger-flicking method. In this study, users are expected to link with their Instagram account to obtain publicly available details using Instagram API. Details on Instagram functionality were collected as numbers were analysed and provided a ranking. Scores will vary from 1 to 3, and they are split up into low scores and high scores. The measurements method of Instagram is used as the way to quantify the Instagram signifiable by the mental questionnaire result.

4.6 Suitability of the present approach to other career predictions

In the future studies, it may be used for issues like job performance, job favourability, likeability, job position efficacy, and social success. Even personality impact was small, personality can cumulate across the lifetimes, impacting education in large ways. current theories of domain-specific learning mechanisms and opportunities must be further investigated in order to discover how one's achievement level of academic attainment can be increased, as well as successful educational pursuits. Thus, our research extends the existing theory by adding to its new theories and strategies of exploration.

5 Conclusions

This research includes utilising Instagram data and defining usernames and their characteristics from their images. This study was able to build knowledge that targeted participants of this specific personality category. This data was obtained based upon Instagram's iPhone program (IOS) and then the personality scores are computed. Another major contributing factor to the performance of this entry was the creation of a ranking method for quantifying the values in a person's Instagram account. There is also a model that can be developed to demonstrate the functionality on Instagram professions with the BIF test and software engineering careers. Since its characteristic is 'passive and independent' employers can better hire for career level jobs by using the Instagram's personality outcome. The use of Instagram helps applicants to invest fewer time on interviews sessions and observing the interviewing of suitability of candidates. Giving workers higher wages will potentially make them become more effective in their jobs and contribute to them becoming happier with their employment.

In addition, this study has also become beneficial for marketing purposes and allows use of many features such as likes or communities where individual personality may become established. When salespeople use this knowledge, it is simple to recommend and introduce their goods to the targeted consumers. With the developments in technology, utilising social networking as a tool for personality prediction can now be applicable to individuals who face problems in agreeing about which colleges they may like to apply to. Understanding an individual's personality may be useful to law enforcement in protecting everyday life. Research has found that the neurotic characteristics of the major five personality model will accurately assess a person's emotional dysfunction. The individuals who are most vulnerable to neuroticism appear to show signs of feeling stressed, anxious, and depressed. Since neuroticism has been linked to suggestiveness, people with higher scores might be more prone to commit crime. This survey would provide the respondent with knowledge that will assist the consultant and the counsellor in getting a clearer understanding of what their strengths and vulnerabilities are. There are some drawbacks that remain for this article. The precision of someone's characteristic prediction is based heavily on how much that person is involved in the Instagram social network. Secondly, the degree of concentration of the study can influence the candor of the members of the survey. Another limitation is just how small the amount of software engineering occupations included is in the study. After learning software engineering, we will also gain from studying other big professions. Future research can also look at other Instagram functionality when evaluating a person's personality.

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