(RESEARCH ARTICLE)

The role of personality traits in shaping digital self: A mixed method approach to Instagram metrics

Sanskruti Hota [1], Maddi Bhawna [2] and Guru Prasad Bag [2, *]

[1] Department of Psychology, Vikash Degree College, Bargarh, Odisha, India.
[2] Department of Clinical Psychology, Mental Health Institute (C.O.E), S.C.B Medical College and Hospital, Cuttack, Odisha, India.

Abstract

Self-presentation plays a pivotal role in the digital world. Social media has allowed users to decide and control how they present themselves. It has allowed users to choose a particular self-image for themselves, which may be referred to as their Digital Persona. This study intends to examine the digital self presented by individuals on social media by employing a mixed-method approach to explore the digital personas of Instagram users, which is comprised of two complementary studies. In Study 1, the qualitative data were collected from the participants' Instagram profiles and analyzed using the content analysis method. In Study 2, the correlation between participants' Big Five personality traits and Instagram Metrics was made. Five categories of content emerged after analysis of qualitative data. No significant correlation was found between the personality traits and Instagram Metrics, thereby, we argue that there is no relationship between offline personality traits and online self-presentation.

Keywords: Digital Persona; Instagram; Mixed Method Study; Content Analysis

1. Introduction

Social media has become an integral part of our lives and has acted as a revolutionary force in recent years. It has affected many things such as work, communication patterns around the globe, as well as the way people receive and share information about health, civic life, news consumption, communities, teenage life, parenting, dating, and even people's level of stress (Perrin et al.,2015). According to the report published by Perrin et al.,2015, 68% of women and 62% of men report social media usage. Its transformative impact and increasing usage have made social media a central focus of research. Ouirdi et al. (2014) used the Lasswellian framework to define social media as a set of mobile and web-based platforms built on Web 2.0 technologies, allowing users at the micro-, meso- and macro-levels to share and geo-tag user-generated content (images, text, audio, video, and games), to collaborate, and to build networks and communities, with the possibility of reaching and involving large audiences. One of the most widely used descriptions for the ongoing digital age is by the Canadian communication theorist Marshall McLuhan (1911-1980) who introduced the concept of "global village" in his book "The Gutenberg Galaxy: The Making of Typographic Man" (1962). This term suggests a phenomenon where the world would become more interconnected like a village, and where the information travels freely and instantaneously from one point to another.

While addressing the theory of the unconscious, Jaques Lacan, a prominent French psychoanalyst (1901-1981), referred to the contemporary digital revolution with his famous formulation that "The Unconscious is the discourse of the other."(The Four Fundamental Concepts of Psychoanalysis,131). His engagement with Georges-Théodule Guilbaud (1912-2008), a French mathematician and specialist in cybernetics and information theory, provides insights into his broader interests in artificial intelligence and information theory, devising the concept of Cybernetic unconscious.

* Corresponding author: Guru Prasad Bag

Making it further, he claims that the ongoing digital revolution rightly captures the contents of the unconscious, making the deeper layers of the psyche more visible and accessible. This shows how history, whether psychical or browser-based, has a determinative effect on the unconscious. With the increasing usage of new media containing complex algorithmic mechanisms, more technology examines our engagement patterns and unconscious behaviors, reflecting the unconscious. In turn, the more it can understand and reflect user preferences, the more media influences and guides the unconscious making it a feedback loop between users and technology (Cowan,2020).

The steady rise in social media usage has provided a new platform for communication and social engagement in various activities. Various reasons cause people to join different online platforms. While conducting 25 in-depth interviews, Whiting and Williams(2013) found 10 uses and gratifications for using social media- social interaction, information seeking, pass time, entertainment, relaxation, communicatory utility, expression of opinion, information sharing, and surveillance/knowledge about others. (Kietzmann et al., 2011) identified seven functional building blocks of social media – Identity, Conversations, Sharing, Presence, Relationships, Reputation, and Groups. These needs drive people to engage in social media, leading to ultimate gratification.

With the outset of the digital era, social media platforms are blooming, thriving for the rise of a newer aspect of one's identity, the digital identity. The expansion of one's self in the form of digital identity, also called one's online digital persona, has largely become an interesting area of research. Various social media platforms like Instagram provide spaces to explore digital identities, where people are free to express their real selves in a digital space as they wish to project online. Cover (2016) outlined that this process of creation of digital identity is constantly subject to change, evolves with time, and isn't constant. Shi et al. (2023) found that the stability of online identity depends on how much time and effort they invest. People often switch between their real-world identities and digital identities, and both identities influence each other mutually. Often this implies that the discrepancy between a real-world identity and digital identity is who people are and how they want to be seen. Onna Serban (2016) came up with the concept of "process identity" which emphasizes the fluid, dynamic, and constantly evolving digital selves.

Zhao et al. (2008) discussed this discrepancy as how platforms like Facebook allow users to express their real selves and also give them the opportunity to present themselves in line with the expectations of their digital counterparts. As a result, creating a digital persona often involves an admixture of authentic real selves attuned with digitally desirable selves in line with the expectations of others. This has existed since the early days of the internet, as highlighted by Papacharissi (2002), how people have been experimenting with online presentation of themselves on personal home pages at that time.

An extensive work has been produced by (Kneidinger,2013) where she identified the various tools people use for self-presentation on Facebook. They are mainly virtual photo albums or the possibility to join one of the numerous Facebook groups. Status functions have also been found to contribute immensely towards communicative self-presentation as they allow users to freely post their personal activities, emotions, and other information. Generally, there were three types of status messages- Purely Information-Oriented Messages (Links to news, events, etc.), Entertainment-Oriented Messages (Jokes, slogans, links to funny videos, etc.), and Personal Information about oneself (Information about one's activities, emotions, etc.). Adding friends, sharing photos and links, and changing profile pictures are some of the other methods for enhanced self-presentation as reported by Kneidinger,2013. Concerning social feedback, users usually evaluate themselves through verbal comments and the use of the "Like" button. These tools play a decisive role in further Facebook use. Also, during the same time, Boyd (2007) introduced a new idea of "networked publics" where people used to participate in collective interaction in the form of online communities. This presentation and expression of oneself online has advanced over a while as we can see on social media platforms like Instagram today. For the new generation users, social media is playing a major role in moulding their identities.

Across varied online spaces, people try to manage their online identities deliberately, with specific intentions. As researched by Ellison et al. (2006) for example, users of online dating sites were found to be tactically building their profiles such that the qualities that would be potentially attractive to potential partners were emphasized in their profiles. This strategic management is not limited to dating but expands across all online environments beyond dating sites, from making online connections with shared interests to gaining followers and making friends in online communities. Diving into the psychological aspect of this, Turkle (2011) suggested that online identities can sometimes become disjointed such that different aspects may become disconnected from each other as they might be influenced by the norms of different online communities.

The creation of a digital persona is often accompanied by an adjourning need for confirmation and validation from others. Li (2021) suggested that users often seek feedback from others online. The purpose of seeking such feedback primarily is to make sure that their persona is being perceived by others as they intended to showcase online. Such

validation comes from the number of likes, followers, comments, and shares received on their posts on platforms like Instagram. This helps users to confirm their online persona in keeping up well with others. It may further be boosted due to "homophily" in social networks where individuals form connections and groups in terms of shared characteristics such as beliefs, preferences, attitudes, gender or occupation, etc (McPherson et al.,2001; Currarini et al.,2016). It also gets strengthened due to the algorithmic recommendations in various online platforms (Santos et al.,2021).

Research findings suggest that in females, especially adolescent girls, self-esteem is often linked to photo-posting behaviors on social media platforms like Instagram, where having average self-esteem is linked to posting more provocative photos on Instagram (Hill and Denman, 2016). The need for confirmation and validation may vary across genders, to which Gürkan et al. (2024) added that self-presentation online differs from male to female. He added that different genders also use different culture-based strategies for creating their digital persona. Ko et al. (2024) found that such culture-enforced beauty standards on social media may lead to the marginalization of those who don't fit into such ideals. Baumeister et. al., (1978) noted that when a user gets any critical remarks and realizes that someone has formed any negative impression of several of his/her attributes, the user may not challenge the impression directly but may try to compensate for it by presenting him/herself that would seem to be more appropriate and acceptable to that context. This type of behavior has been referred to as the "P T Barnum Effect" which involves the interactions of several social influences and cognitive biases to give much importance and favourability to vague and general statements about personality traits given by other users on social media (Snyder et. al.,1977).

Indeed, participation in social media platforms is closely related to information disclosure, a constituent part of the identity formation process, and media-driven user privacy concerns might pose a threat to the construction of a digital persona. The emergence of digital government and e-governance across various cultures where citizens are required to exchange information with the government online also raises a lot of privacy-related concerns among users (Cullen,2008). Findings by Krasnova et al.,2009 suggest that there are four main categories of security threats for users: General Accessibility concerns, Concerns about social threats, Organizational threats, and Identity theft. User Concerns regarding privacy-related, Organizational Threats, and social threats were found negatively related to the amount of information disclosed on the platform. However, user concerns regarding such threats were found positively related to the conscious control behind information disclosure on the platform. User concerns regarding the need for self-identity were also found positively related to privacy management behaviors in the SNS, which has a direct impact on perceived privacy control (Fei Wu,2018).

Pangesti et al. (2024) suggested that while social media helps youth be connected to their cultural traditions, it also opens a gateway for them to explore and connect to the entire world, which blends into their digital persona. This blending of cultures is further explored by King and Fretwell (2022), who highlighted mixed cultural influences in the creation of digital identities of Asian American influencers reflecting global trends of cultural hybridity. Similarly, Zaid et al. (2022) examined how the digital presentation of the self is bringing a change in traditional thinking that resonates with a global audience.

Adolescents occupy a substantial place on the internet. Erikson (1968) indicated the role played by context in shaping the identities of adolescents. Consequently, scholars like Adams and Marshall,1996; Baumeister and Muraven,1996; and Beyers and Çok, 2008 have also focused on the part played by context in the identity-formation process. Social media platforms have given rise to many new contexts for adolescents to express and explore their identities in a digital form. These digital identities lead to online self-disclosure, enhancing friendship formation and relationship quality, and promoting their overall well-being (Valkenburg, P. M., & Peter, J.;2009). A positive relationship also exists between online peer communication and self-concept clarity, which is mediated by friendship quality (Davis, K.;2013). Teens with high socialization in both online and offline social lives are found to have the highest self-concept levels (Khan et al.,2016). Also, there is a significant influence on self-expression grounds where users express different facets of their identity through likes, comments, group affiliations, and status updates (Thorkildsen et al.,2016). However, Charmaraman et al.,2021 highlight the negative effects experienced by sexual minorities on social media, who seem to have smaller digital networks and have higher averages of loneliness and social isolation. They are more often reported to join a group or web-based community to make themselves feel better.

A central way of self-presentation on Instagram is the "bio" feature in current times, which is a brief, text-based feature on Instagram profiles that allows users to express themselves to other users. The bio may include texts, hashtags, emojis, etc, that can be explained by Goffman's (1959/1990) concept of the "frontstage," which refers to how people in social spaces perform for others. On Instagram, while being authentic users may also try to manage their profiles in alignment with societal expectations and curate bios as a reflection of how they wish to be perceived by others. Highfield and Leaver (2016) expanded on Goffman's ideas and pronounced that Instagram bios are not just texts but a combination of other elements like emojis and hashtags which are equally important to gain and engage more followers. Zappavigna

(2015) explains that hashtags are not just trends but a tool for self-presentation for users to connect with online communities with shared interests and also to increase their visibility online and engage better.

Emphasizing visual content over written information is one of the significant features of Instagram. This has influenced how people curate their digital identities while being in alignment with the societal, cultural, and platform-specific norms out there. It has given rise to an influencer culture, normalising filters and photo editing, and creating niche groups. Instagram has evolved to provide diverse opportunities for self-expression where users can explore, display, and refine their talents. As identified by Mehta(2023), Self-expression through content creation also gets influenced by its algorithms, which helps in boosting self-esteem. Additionally, damaging to digital personae, Instagram has made people feel under pressure to display an overly idealized version of themselves. A wide perception gap has also been formed due to online and offline personalities as a result of its distinctive features, which contribute to the sophisticated construction of digital identity.

Visual self-presentation is one of the most well-known features of Instagram, which becomes a significant aspect of one's digital identity. Research studies by O'Donnell(2018) indicate that the frequency of posting on Instagram has a significant direct effect on identity, showing that individuals who post frequently are likely to have a high need for personal-visual identity. Individuals who post more were found to have a higher state of self-objectification, which leads to higher confidence in that individual's posts and in turn, predicts the need for personal-visual identity. The more often a person posts on Instagram, the higher his/her need for personal-visual identity is predicted to be through high confidence in that individual's posts and through high-state self-objectification. He also identified that the type of photos individuals prefer to post most frequently is with their family and friends, and/or hobbies or any distinctive features. Findings suggested that the reason users post on Instagram is to stay connected with their social circles and to get likes. These interpretations are in perfect alignment with the Impression Management theory, which is established by two phenomena, impression motivation and Impression construction(Leary and Kowalsy,1990).

The individuals differ in self-presentations by bios on Instagram, which is duly researched. In a study by Al Rousan and Darwish (2023), gender differences were observed in curation of bios in alignment with previous research works of gender differences in self-presentation online. A notable difference was found between males and females where the former were more likely to highlight competence and strength in their bios and the latter were more likely to emphasize friendliness and modesty in accordance with their shared societal values and expectations. A study by Kováčová (2021) found how bloggers on Instagram try to make themselves stand apart from the rest through their bios. Their bios are a blend of formal and informal elements, which distinguishes them as experts while also making them relatable with the rest. This gives insight into how people differ in using the "Bio Content" tool based on their interests.

Another tool that elevates self-presentation on Instagram is emojis, which help in audience engagement and the portrayal of attitudes and emotions. Emojis are often pictographs—images of things such as faces, weather, vehicles and buildings, food and drink, animals and plants—or icons that represent emotions, feelings, or activities" (UTR-17 Unicode Character Encoding Model, 2008). It has been observed that the use of emojis is, very often, governed by the type of account users have, i.e., private or public account (Marko,2023).

Another layer to the online persona that can be explored is the way of presentation of self digitally can also be influenced by the underlying personality traits of the individuals. Nitschinsk et al. (2022) highlighted how traits like Machiavellianism and Psychopathy make individuals feel more comfortable in expressing themselves freely in online environments than in offline ones. It has been well-researched how traits like Narcissism may predispose individuals to indulge in seeking more followers and showcasing their physical appearance more to promote their concept of self and display confidence(Paramboukis et al., 2016). Roth et al.,1986 highlighted that personality factors and situational contexts can shape how individuals choose different tactics to manage self-presentation. He identified several dimensions of self-presentation such as Self-promotion, Ingratiation, Intimidation, Exemplification, and Supplication.

Research studies also suggest that the way of presentation of self in the online sphere can also be used to predict a range of underlying private traits and attributes including sexual orientation, ethnicity, religious and political views, personality traits, intelligence, happiness, use of addictive substances, parental separation, age, and gender. As marked by Kosinski et al.,2013, it was found that each like on Facebook attracts users with different average personality and demographic profiles, and thus can be used to predict those attributes. Other widespread kinds of digital records include browsing histories, search queries, and purchase histories (Kosinski et al.,2013). Similar findings were reported by Stachl et al.,2020, revealing that communication and social behavior, music consumption, app usage, mobility, overall phone activity, and day- and night-time activity are distinct predictors of Big Five Traits.

Focusing on the personality dimensions, studies by Baumeister et. Al.,1989 reveals that significant behavioral correlates of measured self-esteem depend on self-presentation variables like audience presence and personality traits. Traits like extraversion and conscientiousness are high predictors of careful handling of self-presentation, which, then, influences their self-esteem positively(Baumeister et. Al., 1989). Studies by Kircaburun et al. (2018) and Jennewein et al. (2020) support that personality traits like agreeableness and conscientiousness may lead individuals to use the platform more consciously and mindfully. Conscientiousness is also negatively associated with other social media platforms such as Facebook (Sindermann et al.,2020). Individuals high on these traits are less likely to engage compulsively and are less prone to get addicted on account of low information-seeking tendencies on social media (Liu and Campbell, 2017). Instead, trait conscientiousness is found to be associated with more information-sharing behaviors on social media platforms like WeChat. (Deng et al., 2017). On the other hand, frequent users are more susceptible to developing problematic behaviors online like addiction to the platform. Interestingly, active posting behaviors on the platform are associated with less overuse than passive scrolling behaviors (Bonetta et. al, 2020).

Farad et al. (2024) expanded on this and suggested that while traits of extraversion, conscientiousness, and agreeableness might act as a defense against addiction to the platform, traits like Neuroticism can make individuals more susceptible to it, which can impact happiness and mental well-being of users. It can lead to more social media use and rates of depression (Merill et al., 2022). Neuroticism may make users vulnerable in fact to increasingly experience the Fear of Missing Out (FoMo) from other users. (Rozgonjuk, 2020). Such a fear of being left out by peers may lead to more strain experienced by the user (Beyens, 2016). Another trait, Agreeableness, has also been evidenced to induce anxiousness about missing out on experiences (Hamutoglu et al., 2020). This experience of fear of missing out is mostly experienced by female users and is also found to be associated with higher rates of emotional dysregulation and depression (Marengo et al., 2024). Interaction of users on platforms like Instagram can affect their moods as suggested by Zhan et al. (2018). Healthy and positive interactions of individuals with others may lead to feeling good, and unhealthy interactions may make users feel concerned and upset. Thus, Dutta et al. (2022) emphasized the importance of maintaining good mental health by adopting a balanced engagement with others online. When people feel good about themselves and admire themselves, it may also reduce the frequency and use of the platform. This is particularly studied in individuals who are high in conscientiousness traits.

Adding a fresh perspective to this, Drążkowski et al. (2022) suggested that social media platforms like Instagram could lead to a temporary change in individual personality traits. Such a change was observed in the form of a temporary increase in trait neuroticism in individuals exposed to the platform, which can be explained by their need to stand out from the rest, and contributes to the overall understanding of how individuals want to be perceived online.

To understand the engagement metrics on Instagram better, studies by Keep et al. (2017) and Ferwerda et al. (2018) found individuals who are more agreeable and extroverted are more likely to comment and like more posts, thereby engaging more. This was supported by Jennewein et al. (2020). In addition, he also added that agreeable individuals mostly have private profiles which may suggest their preference for private and meaningful connections.

Personality traits not only help to develop an understanding of behaviours users display online, but they also help in understanding what content they post online. Hong et al. (2019) studied how the posting of filtered vs unfiltered selfies affects Instagram engagement such as likes on posts, where unfiltered selfies are mostly perceived as raw and real and are preferred by the audience. Despite this, filters are widely used and Ferwerda et al. (2016) found that certain filters on Instagram may reflect certain personality traits. In the expansion of this, more studies like that of Subramani (2019) found that individuals with different personality traits have different choices in visually portraying their photos. Extroverts use more vibrant colors and shades of green in these pictures while neurotic individuals may prefer brighter pictures without extreme saturation levels.

Thus, personality traits not only impact the interaction of users with others on Instagram but also the preferences they have for making their posts. It is supported by research by Ferwerda et al. (2018) who found that personality traits influence the patterns by which users engage with others and present themselves. Openness is found to be linked more with posts relating to musical instruments, while conscientiousness is linked with clothing and sports. Hence, underlying traits help to understand online behaviors and different user interaction patterns with different purposes and interests. Andersson and Swillo (2018) revealed that different personality traits may have different motives for the use of Instagram. Neurotic individuals may be used for surveillance and extroverts for documenting their lives. Different motives may correspond to their different purposes of being on the platform, which may bring differences in shared experiences on the platform.

There is no one-size-fits-all approach to self-presentation on Instagram and the presentation of oneself varies according to different underlying personality traits and individual characteristics (Harris and Bardey, 2019). Even personality

traits have been attempted to be predicted by the available social media like Facebook data of the users, like the number of posts, likes, and interactions, and in the Big Five personality traits, Extroversion could be predicted with the highest accuracy (Marengo and Montag, 2020). This underlines a new pathway for future predictive personality analysis online.

The purpose of the investigation was to provide additional literature on the conceptual framework of the digital persona and examine how individual traits differ based on self-presentation on social media. For this, the social media platform Instagram was chosen where the data was collected from the individual's bio content, number of posts, number of followers, and following count. The user's bio content was subjected to content analysis which provided valuable insights into how users prefer to display themselves online. The second part of the study takes a quantitative approach to study the correlations between digital persona and Big Five personality traits.

Study -1

As one of the most frequently used applications, Instagram offers a range of opportunities to present oneself through bio content. This shapes the concept of the digital persona. In this study, bio content was collected from the selected 100 samples, and content analysis was applied to interpret the texts and gain qualitative insight by coding for the categories.

2. Methodology

2.1. Sample

The study adopted a qualitative approach. To get an in-depth understanding of Digital Persona, a non-random convenience sample of 100 Instagram users was selected, who willingly participated in sharing their Instagram handles.

2.1.1. Inclusion Criteria

- Subjects must be between 18 and 30 years of age
- Subjects must be willing to share their Instagram handle

We chose Instagram over other potential sources of bio content as it is one of the most typically used online platforms. Hence, it becomes easy to access its users over time, making it simpler to track and collect relevant data.

Instagram allows its users to express and present themselves in their profiles with the help of the bio content, which is to be filled within 150 characters. This offers us a valuable understanding of the concept of the Digital Persona.

As such, we have employed systematic content analysis allowing us to set up codes and distinguish between different categories of bio content.

2.1.2. Exclusion Criteria:

- Subjects whose Instagram accounts were unable to access.

Some Instagram accounts could not be traced later due to changes or deletion of their handles. From the selected 100 participants, 5 samples were excluded from the study.

2.2. Data Collection

The data for the bio content was obtained from a sample of 100 out of which we eliminated 5 of them. 95 Participants within the age group of 18 to 30 had filled out an online survey, which comprised socio-demographic details, and then were asked to provide their Instagram Handles. A tool used in the study while collecting responses was the NEO Five-Factor Inventory(NEO-FFI) 3. The purpose of the study was explained to them, and they were assured of the confidentiality of their responses. After getting their consent, they were given instructions about how to fill out the questionnaire and were administered the scale. Then the filled questionnaires were collected.

2.3. Data Analysis

Content analysis was preferred for the chosen data, where the content of the data was all joined together by a reliance on a coding scheme based on a set of coding categories and a body of text to which the coding scheme was applied to

quantify the frequency of occurrences of coding categories (Franzosi,2008). Each user's bio content was carefully coded and then analyzed accordingly.

2.4. Findings

Five Code categories (Table 1) emerged from the content analysis of selected data- 1) Identity Codes (Includes Age, Birthday, Gender, Hobbies, Profession, Personality Traits, and Idols/Role Models); 2)Affiliation Codes(Includes University/Alma Mater, Location/city, Cultural/Religious Affiliations); 3)Self Expression Codes(Includes Individuality/Particularity, Emojis and Quotes); 4)No Bio; and 5)Others

The organization of coding categories and respective codes are presented in Table 1.

Table 1 describes the codes and their coding categories:

Code Categories	Codes
Identity Codes	Age Birthday Gender Hobbies Profession Personality Traits Idols/Role Models
Affiliation Codes	University/Alma Mater Location/City Cultural/Religious Affiliations
Self-Expression Codes	Short Liners Emojis Quotes
No Bio	
Others	

2.4.1. Identity Codes

Identity codes include personal details and characteristic traits that describe the individual and distinguish them from others. To describe their identity, people have mentioned their age, birthday, gender, hobbies, profession, role models, and personality traits in bios.

2.4.2. Affiliation Codes

Affiliation codes refer to those codes that are used to denote their association or connection with a particular institution, place, or entity. There are individuals affiliated with Universities, Cities, or places of residence, and Cultures/Religions.

2.4.3. Self-expression Codes

Self-expression codes involve various ways through which individuals convey their interests, attitudes, core values, and beliefs and display their thoughts, feelings, or ideas. It promotes self-representation and creative expression. A range of people have used emojis, quotes, and short liners to express themselves in bios.

2.4.4. No Bio

Some individuals have provided no description or written information in their bios. However, some users did mention their names in the bios. 15 users were found to have no written bio in their profiles.

2.4.5.   Others

Others include sections of their bios that do not explicitly fall under any of the above code categories. A minority of individuals have mentioned the scholarship they received, Lifestyle activities, or aesthetics. Some Instagram users include links to their other social media profiles or websites in their bios, such as YouTube, Facebook, LinkedIn, etcetera.
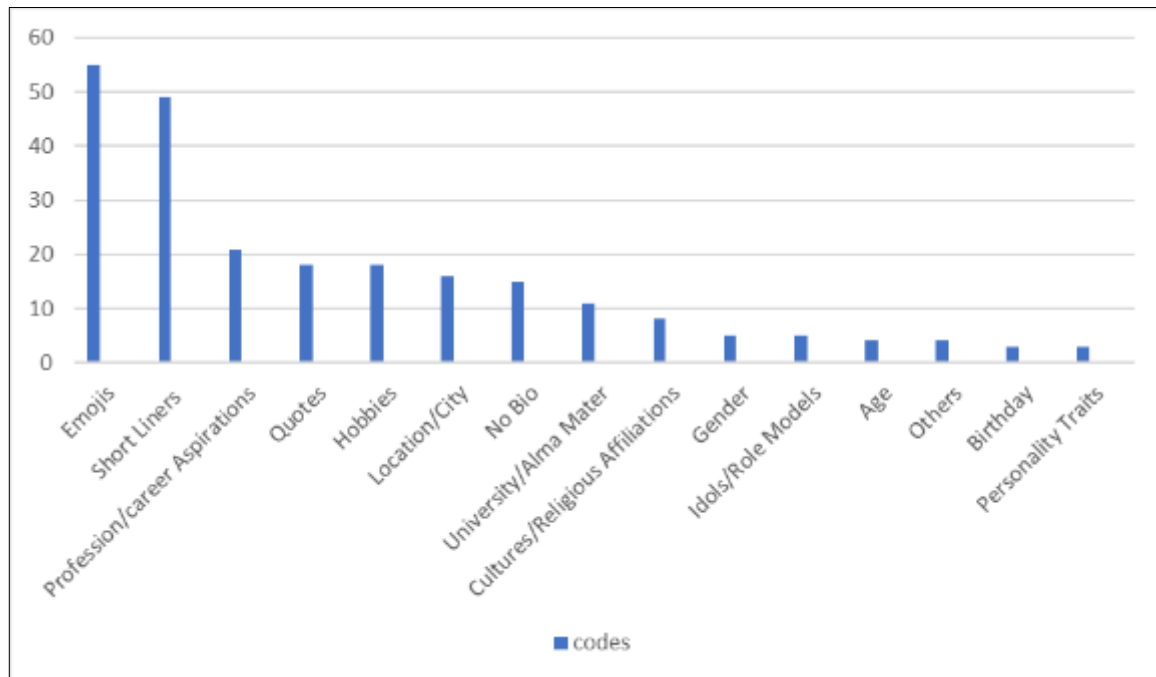

Figure 1 The frequency distribution of codes

2.5.   Analysis of Findings

A content analysis of 100 Instagram bios provided 15 distinct codes categorized into five coding categories. The findings reveal that the most frequently used code is emoji with 58% of users using it in their profiles. It suggests that users value visual representation and creativity in their self-presentation. Short-liners conveying core beliefs and values were used by 49% of users. Contrastingly, only 3% explicitly mentioned their personality traits, which marks the least frequency. Users have emphasized other prominent aspects of their self-presentation such as Profession, Quotes, Gender, Age, Location, and hobbies. These findings suggest that Instagram Users prioritize visual expression, Personal core values, quotes, and Professional Identity over birthdays and personality traits in their bios, providing valuable insights into online identity formation.

Study-2

- **Aim:** To study the relationship between Digital Persona(Instagram Metrics) and Big Five personality traits

- **Objective:** To review the correlation between the number of posts, followers, and Following count on Instagram with Big Five traits(Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism)

3.   Methodology

- **Research Design:** A quantitative Pearson correlational research design was used to study the relationship between digital persona and the Big Five traits.
- **Sample Description:** A sample of 100 users was selected through non-random convenience sampling who willingly participated in sharing their Instagram Handles.

3.1.   Variables used for the study

- Number of posts

- Number of followers
- Following Count

3.2. Tools used for the Study

NEO Five-Factor Inventory (NEO-FFI) 3: The NEO-FFI 3 is a brief comprehensive measure of five major domains of personality according to the Five Factor Model: Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. It is a 60-item version of NEO-PI-3 with 12 items measuring each of the five domains. It includes self-descriptive statements that participants respond to using a five-point Likert-type scale. Respondents rate each item on a scale from 0(Strongly Disagree) to 5(Strongly Agree). Item responses are summed to create raw scores for each of the five scales: Neuroticism (12 items), Extraversion (12 items), Openness (12 items), Conscientiousness (12 items), and Agreeableness (12 items). Total scores are the sum of items and range from ≤25 to≥75. This scale shows strong reliability with Cronbach's alpha ranging from 0.86 to 0.92 and test-retest reliability around 0.90, along with high validity across various personality constructs.

4. Analysis of results

Table 2 Correlation Table

		No. Of Posts	No. Of Followers	Following Count
Extroversion	Pearson Correlation	-.013	.014	-.152
	Sig. (2-tailed)	.895	.888	.131
	N	100	100	100
Neuroticism	Pearson Correlation	.041	.007	.050
	Sig. (2-tailed)	.682	.949	.619
	N	100	100	100
Openness	Pearson Correlation	-.036	-.069	-.006
	Sig. (2-tailed)	.721	.497	.952
	N	100	100	100
Conscientiousness	Pearson Correlation	-.036	-.008	-.121
	Sig. (2-tailed)	.724	.934	.229
	N	100	100	100
Agreeableness	Pearson Correlation	.070	.005	-.111
	Sig. (2-tailed)	.488	.963	.270
	N	100	100	100
	N	100	100	100

Correlation is significant at the 0.05 level (2-tailed)
Correlation is significant at the 0.01 level (2-tailed)

With reference to Table 2, no significant correlation was found between the personality traits (Extroversion, Neuroticism, Openness, Conscientiousness, Agreeableness) and Instagram metrics (No. of Posts, No. of Followers, Following Count).

5. Discussion and Conclusion

On Instagram, a more frequently used way for self-presentation is using the "bio" feature, which consists of a combination of texts, hashtags, emojis, etc. (Highfield and Leaver,2016). Instagram has evolved to provide diverse opportunities for self-expression where users can explore, display, and refine their talents. The qualitative part of our study aimed to provide a comprehensive understanding of how individuals express themselves in the digital realm through the use of the "bio" feature of Instagram. Content analysis of the bio content revealed 15 different codes

categorized into five distinct categories. The findings indicate that the most preferred tool for self-presentation is emoji with 58% of users using it in their profiles. Emojis allow users to express individuality, humor, and creativity in ways that text alone may not achieve. It suggests that users value visual representation and creativity in their self-presentation. Moreover, the varied use of emojis- from expressing different emotions, values, and views to hobbies and professions highlights how users consciously construct their digital persona that aligns with how they wish to be perceived by others. The emphasis on emojis suggests a gradual shift towards more visual and symbolic forms of communication than textual ones.

In Study 2, we examined the correlation between Instagram Metrics(Number of posts, Number of followers, and Following Count) and Big Five personality Traits(Openness, conscientiousness, extraversion, agreeableness, and neuroticism). To study the effects of Instagram metrics, which represent the digital persona of the individual with the Big Five traits, we applied correlation analysis which revealed no significant association between personality traits, as assessed by the NEO Five-Factor Inventory-3, and Instagram Metrics such as the Number of posts, Number of followers, Following Count. This lack of correlation suggests that the metrics often used to evaluate Instagram activity may not accurately reflect an individual's personality traits. The study supposes that Instagram metrics are influenced by many other additional factors like the algorithms, trends, type of content posted, and the user's specific purpose for using Instagram (e.g., personal use/professional branding), etc. Hence, we argue that the portrayal of the Digital Persona of individuals may not be generalized to their internal personality traits. Further exploration might help in having a more comprehensive understanding of the nature of the digital persona of individuals and how they might be influenced by the individual's personality dispositions.

Implications of the study

The study explored the interplay between personality traits and digital self-presentation on Instagram through a mixed-method approach. By combining the qualitative content analysis of Instagram bios with quantitative correlation analysis of Instagram metrics, we aimed to provide a comprehensive understanding of how individuals express themselves in the digital sphere and whether their offline personality traits are reflected in measurable online behaviors. It enhances our understanding of how individuals curate and project their digital personas on social media, particularly Instagram. The finding that emojis are the most frequently used element in Instagram bio content suggests that users prefer visual over textual presentation of their digital selves. It may also indicate a preference for playful and informal self-presentation, which may contrast with how users present themselves in formal settings. While the qualitative findings emphasize the strategic use of emojis as a tool for self-presentation and identity expression, the quantitative results challenge the notion that offline personality traits directly get translated to online behaviors. By correlating the Big Five personality traits with Instagram Metrics, the study examined any theoretical insights into how offline personality characteristics may manifest in online behavior. The lack of correlation between personality traits and Instagram metrics suggests that people may behave differently in online spaces than what their personality traits predict. Further research into other measures of Instagram metrics such as the types of content posted, or the time spent on the platform might have some associations with the actual personality traits.

Limitations of the study

The bios examined in Study 1 provide a snapshot of a user's self-presentation but lack context about their overall Instagram activity or personality. Instagram bios are often updated, reflecting changing moods, trends, or priorities that may not align with the Big Five traits. The Instagram Metrics used in our study, i.e. Number of posts, Number of followers, and Following Count, may not fully capture the range of digital personas presented on the platform. Other metrics like the time spent on the platform and the type of content posted might indicate more complex or indirect ways through which the digital persona is influenced by the underlying personality traits and could provide a richer understanding of the interplay between underlying dispositions and online behaviors. The use of predefined personality trait measures (Big Five) in Study 2 might not fully capture dimensions relevant to online behaviors. Participants might not accurately reflect their true personality traits, leading to potential discrepancies in results. The qualitative part of the study automatically limits the generalizability of the findings because of coding. Although Study 1 focuses on qualitative data, the content analysis method applied, which is based on frequency, conceals the true nature of the study. Addressing these limitations is necessary for future research that might deepen our understanding of the complex interplay between personality traits and digital self-presentation.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of ethical approval

Ethical approval was obtained.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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