



## A Comparative Study of Personality Traits Between Dark Web and Surface Web Users

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### ABSTRACT

The aim of the present study is to find out the difference between users and non-users of dark web on the variable of maladaptive personality traits. The maladaptive personality or pathological personality led the individual to get their interest without considering the differentiation in right or wrong i.e. moral or immoral (Noser et al., 2015). To explore the connection, comparative cross-sectional survey design applied examine the differences in maladaptive personality traits between dark web users and surface web users. A total of 168 participants including 57 Dark Web users (M= 23.52 years, SD = 7.42), and 111 surface web users (M = 22.38 years, SD = 4.80). Maladaptive Personality Traits were assessed using the DSM-5 Personality Inventory (PID-5). The result of the present study supports the hypothesis revealed that maladaptive personality showed significant difference between dark web users and surface web users, particularly in the areas of negative affect, antagonism, and detachment. Implications of the study have been proposed.

**Keywords:** Dark Web, Surface Web, Maladaptive Personality Traits, PID-DSM5, Independent t-test.

## INTRODUCTION

Human beings have a set of traits that identifies the personality of the individual (Nasello et al., 2024). Personality is defined as the set of traits that are formed based on parenting (Johnson et al., 2011), personal experience (Gleason et al., 2013); and the ability to handle the situation (Furnham & Cuppello, 2023). According to previous research, children learn more from observational learning more than with the progression of age (Buritica et al., 2024). Once formed personality has become a predictor of their behavior in later phase of life (Wada, 2025).

Humans have both bright side and dark side of the personality also named as adaptive and maladaptive (Huver et al., 2009). The adaptive personality is the one where the individual tends to have a flexible personality and thus has got the approximately right proportion of the traits that an individual needs to survive with. Whereas the maladaptive personality is defined as the inflexible personality with unequal proportion of the traits required for leading the life. There are further five different subtypes that become under the classification of maladaptive personality trait are negative affect, detachment, antagonism, disinhibition, and psychoticism (American Psychiatric Association, 2013).

*Negative Affect* refers to the tendency to experience negative emotions such as anxiety, depression, and irritability. *Detachment* involves withdrawal from interpersonal interactions and a lack of emotional responsiveness. *Antagonism* is characterized by behaviors that are hostile, deceitful, or manipulative. *Disinhibition* reflects a lack of restraint in personal and social behaviors, often leading to impulsivity. *Psychoticism* includes traits related to unusual beliefs and experiences, often associated with a lack of reality testing (American Psychiatric Association, 2013).

Maladaptive personality led the individual to get their interest without considering the differentiation in right or wrong i.e. moral or immoral (Noser et al., 2015). Research indicates that individuals with maladaptive personality traits are more likely to engage in problematic internet use, which can include visiting the dark web (Schimmenti et al., 2019). Studies show that the dark web tends to attract people who already experience psychosocial difficulties, excessive online use, and certain maladaptive or "dark" personality traits (Kircaburun & Griffiths, 2018). While not everyone with maladaptive personality traits will visit the dark web, research supports a clear association between these traits, problematic online behaviors, and a greater propensity to seek out the dark web or similar environments (Schimmenti et al., 2019; Sirola et al., 2024; Kircaburun & Griffiths, 2018).

Sirola et al. (2024) conducted two studies that looked at predictors of Dark Web users' personalities. First, they conducted a thorough cross-national study in six European nations. They hypothesized that social belonging and high institutional trust would be negatively correlated to dark web use while gambling, involvement in online identity spaces and greater psychological distress would be positively related to it. Analyzing the data through logistic regression, they found that those

who used the Dark Web also displayed dangerous behaviors such as online gambling. These individuals also scored lower on measures of social connection and institutional trust. The results of the study linked dark web use to mental distress, increased online activity, and a lack of social connection.

According to previous research, disinhibition and psychoticism are the qualities related to careless, emotionally distant, and manipulative conduct, were found to be associated with psychopathy in particular (Jordan et al., 2021). Gray (2024) aimed to understand the psychological profiles of dark web users and those who partake in illegal online behaviors, i.e., cybercriminals through meta-analytical approach to go through earlier studies and find the trends behind the motivation of darknet users. The literature showed that people who use the dark web are encouraged by their thrill-seeking personalities, often acting impulsively. They do not feel much empathy, allowing them to treat others poorly without emotional consequences. They might have distorted thinking patterns that help minimize guilt for engaging in devious practices. It also showed that when people felt like their identities would be protected and kept anonymous, they were more likely to act riskily. They often ignored their usual sense of personal responsibility, which made them feel less held back and more willing to engage in suspicious activity. Essentially, the anonymity lowered their guilt, making it easier for them to do things they otherwise would not.

Laulik et al. (2007) helped in understanding more about how certain 'maladaptive' personality traits. might play a role in online sex offending. They had 30 people answer three questionnaires, including a personality assessment inventory. Interestingly, the researchers found that while these individuals didn't show alarming levels of overall mental health problems, most of them did score moderately to highly on the variable. An important fact the researchers discovered was that these sex offenders often struggled to be warm or assertive in their relationships. This suggests that they found it hard to stand up for themselves, lacked empathy, and often could be self-conscious. These individuals scored higher than non-offenders on a scale measuring schizophrenia symptom. These symptoms show that they might struggle with connecting with others and stay socially withdrawn. It is also possible that their increased internet use is because they find it hard to build close relationships in real life. Schimmenti et al. (2021) study the relationship between dissociative symptoms of depersonalization/ derealization, problematic internet use, maladaptive personality traits and insecure attachment styles among young adults. They found that disinhibition was not connected to problematic internet use, which was against the more common trend in literature. They concluded that when young adults spend too much time online, and also possess unhelpful personality traits, insecure ways of relating to others, and struggle with interpreting their physical sensations, it increases their chances of developing problematic internet use.

Hussain et al. (2021) investigated the link between problematic social networking site use, dark psychological traits and being emotionally dysregulated.

The results showed that dark triad traits directly contribute to emotional dysregulation, with narcissism specifically linked to problematic social networking site use. These findings suggest that the same psychological characteristics observed in online contexts could be even more exaggerated within the dark web's anonymous and unregulated environment and potentially encourage maladaptive online behaviors among its users.

When taken as a whole, these findings show a trend: individuals with higher levels of maladaptive tendencies are drawn to online activities that are anonymous and less accountable. The recurring emergence of disinhibition, antagonism, and detachment across various online contexts further supports the argument for studying the DSM-5 Alternative Model in analyses of online behavior. However, there remain gaps. Few studies have used pathological trait assessments to compare dark web users and surface web users. Furthermore, although associations have been shown between particular behaviors and dark personality traits, the underlying mechanisms and variations in trait intensities across user groups remain largely unexplored. The DSM-5 Personality Inventory is used in this study to directly compare the two populations, filling this gap and providing a more focused classification of online risk.

### **Significance of the study**

Recently, there has been increased awareness regarding online deviance, for example using the Dark Web. However, research into the psychological characteristics of Dark Web users remains limited. The five maladaptive traits of personality in the DSM-5 Alternative Model, i.e. detachment, negative affect, psychoticism, disinhibition, and antagonism, are still not well-studied in this context (APA, 2013). To build a strong basis for this study of looking at dark web users and surface web users through the lens of maladaptive personality characteristics, this study aims to focus on identifying the difference between dark web users and surface web users on the variable of maladaptive personality traits. By doing this study, psychologists, teachers, parents, and relevant people focus on positive interaction with children in growing years of life and understand how negative interaction affects the later life of a person and people around that person.

### **Objective**

- To find out the difference between dark web users and surface web users on the variable of maladaptive personality traits.

### **Hypothesis**

- It was hypothesized that there was a difference between dark web users and surface web users on the variable of maladaptive personality traits.

## **METHOD**

### **Research Design**

This study employed a comparative cross-sectional survey design to examine differences in maladaptive personality traits between individuals who use the dark web and surface web.

## Participants

A total of 168 participants were recruited, comprising 57 Dark Web users and 111 Surface Web users. The mean age of Dark Web users was 23.52 years ( $SD = 7.42$ ), and the mean age of Surface Web users was 22.38 years ( $SD = 4.80$ ). The demographic details are presented in Table 1.

Table 1: Demographic Variables

	Dark Web Users (n=57)	Surface Web Users (n=111)
Age	23.52 (7.42)	22.38 (4.80)
Gender		
Male	39 (68.4%)	71 (64%)
Female	18 (31.6%)	40 (36%)
Birth Order		
First Born	21 (36.8%)	40 (36%)
Middle Born	18 (31.6%)	41 (36.9%)
Last Born	18 (31.6%)	30 (27.1%)
Family System		
Nuclear	35 (61.4%)	67 (60.4%)
Joint	22 (38.6%)	44 (39.6%)
Qualification		
Undergraduate	38 (66.7%)	77 (69.4%)
Graduate	19 (33.3%)	34 (30.6%)
Working Status (occupation)		
Working	31 (54.4%)	46 (41.4%)
Non-working	26 (45.6%)	65 (58.6%)
Illegal activity type		
Child Pornography	17 (29.8%)	42 (37.8%)
Fraud and Scam	21 (36.8%)	32 (28.8%)
Illegal Dealing	6 (10.5%)	15 (13.5%)
Live Torture	9 (15.8%)	19 (17.1%)
All of Above	4 (7%)	3 (2.7)
Impact on World		
Positive	0 (0%)	0 (0%)
Negative	24 (42.1%)	76 (68.5%)
Neutral	33 (57.9%)	35 (31.5%)

## Procedure

Participants were recruited online through social media platforms, internet forums, and online communities. An online informed consent form was provided to all participants prior to data collection. The survey ensured complete anonymity and confidentiality due to the sensitive nature of the topic. Participants were asked to fill demographic information including their preference to use to dark web over surface web.

## Measures

Demographic information collected included age, gender, birth order, family system, educational qualification, and working status.

Maladaptive Personality Traits were assessed using the DSM-5 Personality Inventory (PID-5), which measures five maladaptive personality domains: Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism. Each domain consisted of five items, with 25 items in total. Items were rated on a Likert scale (APA, 2013). The instrument demonstrated good internal consistency (overall Cronbach's  $\alpha = .918$ ), with subscale reliabilities ranging from .688 to .766 (see Table 2).

## Data Analysis

Descriptive statistics were calculated for all demographic variables. Independent sample t-tests were conducted to compare Dark Web users and non-users on the overall maladaptive personality traits and each domain. Effect sizes were computed using Cohen's *d*. A significance level of  $p < .05$  was used for all analyses. Reliability analyses confirmed the internal consistency of the scales.

## Ethical Considerations

This study adhered to ethical research guidelines involving human participants. Participation was voluntary and anonymous, and participants were informed of their right to withdraw at any time. Data was treated confidentially, with particular care due to the nature of self-reported illegal activity.

Table 2: Reliability Analysis

Variables	Items	<i>A</i>	<i>M</i>	<i>SD</i>
Maladaptive Personality Traits	25	.918	32.64	15.45
Negative Affect	5	.730	7.52	3.85
Detachment	5	.688	6.57	3.55
Antagonism	5	.766	5.19	3.71
Disinhibition	5	.712	6.26	3.62
Psychoticism	5	.764	7.08	3.68

## RESULTS

Table 3: Independent t-test on the Maladaptive Personality Traits between dark web and surface web users.

<i>Variables</i>	<i>Dark Web Users (n=57)</i>		<i>Surface Web Users (n=111)</i>		<i>t (166)</i>	<i>P</i>	<i>Cohen's d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Maladaptive Personality Traits	1.47	.537	1.21	.640	2.62	.009*	.440
Negative Affect	1.62	.686	1.44	.807	1.39	.166	.240
Detachment	1.54	.665	1.19	.708	3.02	.003*	.509
Antagonism	1.31	.723	.895	.710	3.62	.000*	.579
Disinhibition	1.39	.687	1.18	.735	1.79	.074	.295
Psychoticism	1.51	.589	1.36	.799	1.25	.212	.213

Note: \* $p < .05$

Table 3 presents the results of an independent t-test comparing maladaptive personality traits between dark web users (n=57) and surface web users (n=111). The analysis reveals a significant difference in overall maladaptive personality traits, with dark web users exhibiting higher scores (M = 1.47, SD = 0.537) compared to surface web users (M = 1.21, SD = 0.640),  $t(166) = 2.62$ ,  $p = .009$ , Cohen's  $d = 0.440$ . Among the individual traits, dark web users scored significantly higher in "Antagonism" (M = 1.31, SD = 0.723) compared to surface web users (M = 0.895, SD = 0.710),  $t(166) = 3.62$ ,  $p < .001$ , with a large effect size (Cohen's  $d = 0.579$ ). However, no significant differences were found for "Negative Affect," "Detachment," "Disinhibition," or "Psychoticism," indicating that these traits were comparable across both groups. The findings suggest that dark web users tend to exhibit more antagonistic behaviors and overall maladaptive traits than surface web users.

## DISCUSSION

The aim of the study is to find the difference between users and non-users of dark web on the variable of maladaptive personality traits. It was hypothesized that there was a difference between dark web users and surface web users on the variable of maladaptive personality traits and users score high on maladaptive personality

traits as compared to surface web users. The result of the present study supports the hypothesis, and the independent t-test reveals that dark web users exhibit significantly higher maladaptive personality traits compared to surface web users, particularly in the areas of negative affect, antagonism, and detachment. The effect sizes, such as Cohen's d, indicate moderate to large differences between the two groups. The results also align with the previous studies (Schimmenti et al., 2019).

However, there is little supporting evidence that gives a direct relationship of maladaptive personality with visiting the dark web. Maladaptive personality traits showed significant difference ( $p = 0.009^{**}$ ). Furthermore, detachment personality, a type where the individual prefers social isolation, limited emotional expressions and difficulty in forming and maintaining relationships, also showed significant difference ( $p = 0.003^{**}$ ) thus is also supported by research which says that poor social relationships are associated with dark web in one way another. Whereas a highly significant result obtained when antagonism personality, a type of personality characterized by a tendency to prioritize one's need and desire over others, the behavior may include grandiosity, callousness, manipulative behavior and aggression, is also significant ( $p = .000^{***}$ ) moreover it is also supported by the previous research which says that the both low self-control and the dark triad (narcissism, machiavellianism, psychopathy) are positively associated with dark web visiting (Partin, 2025).

Another study proves the results of this study right by predicting which personality traits are more inclined towards using the dark web (Katta et al., 2025). Thus, the study showed that individuals with antisocial behavior are the ones who predict the use of the dark web with more certainty. Lastly, above mentioned all of the research proved the use of dark web with the maladaptive personality directly or indirectly thus paving the way for the recent research to have authenticity and reliability.

## CONCLUSION

To investigate the relationship of maladaptive personality and visiting dark web self-report scale was used where the random data collection technique was being used. Thus, the study has proved that maladaptive personality is the active predictor of the use of dark web. Moreover, the results of the study also align with the previous studies and research which further strengthen the stance of this study. The study is limited to the pathological personality traits of dark web users. Different psychological correlates should be measured to explore the mechanism and mediators leads to the tendency to watch dark web.

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