

What Lies Beneath the Mask of Online Trollers

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Declaration

This Thesis is entirely my own work and has not been previously submitted to this or any other third level institution.

Sign:

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Acknowledgements

I'd like to dedicate this thesis to my wonderful husband Declan who has championed me through life, my pregnancy and throughout my Masters. I truly could not have done this without his love and dedicated support.

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Abstract

Previous studies have focused on the Dark Tetrad exclusively as a predictor of trolling inclusive of the Sadism measure. Thus, negating the cluster of the Dark Triad, specifically the Psychopathy measure for trolling (Buckels, Trapnell, & Paulhus, 2014). This research examined the relationship between the Dark Triad (Narcissism, Machiavellianism and Psychopathy) and Online Trolling.

In an online study ($N=131$), respondents completed a 31-item personality inventory utilizing the Short Dark Triad and Global Internet Assessment of Trolling Scale to identify a correlation between the Dark Triad of personality and trolling online.

Hypothesis 1 found results are statistically significant using a Pearson's Co-efficient, as correlations are positively related to trolling experience and statistically significant at the 0.01 level (2-tailed).

The present study hypothesized that there would be a relationship between the Dark Triad and the propensity to enjoy trolling. Hypothesis 2 indicated that Psychopathy is a primary factor for trolling, however an ANOVA test indicates that all traits are statistically significant factors responsible for trolling behavior (1-tailed).

Hypothesis 3 explored if there was a significant correlation between the Dark Triad and frequency of internet usage. Results indicated that Psychopathy is not positively associated with internet usage using a Pearson's Correlation test, although Narcissism and Machiavellianism are statistically significant at the 0.05 level (2-tailed).

The present study contributes to the existing body of research demonstrating that Psychopathy is a significant predictor of online trolling, unlike Narcissism and Machiavellianism. This suggests, Psychopathic individuals may troll online superfluous of internet usage. This research clearly identifies that Dark Triad Personalities are related to online trolling behaviours and that possessing all three traits are significant in leading to a propensity to troll online over those who negate Dark Triad traits.

Keywords: Dark Triad; Trolling, Narcissism, Machiavellianism, Psychopathy, Cyberpsychology

What Lies Beneath the Mask of Online Trollers

With the global phenomenon of computer usage and modern reliance on technology to communicate, the internet has become an extension of how people represent themselves online. Recent statistics indicate that over 3.8 billion people have access to the internet, this contributes to 40% of the global population (Internet Live Stats, 2018). The online medium of technology facilitates meaningful communication in creating professional, personal and social connections through others (Fox & Rooney, 2015). However, despite the positive impact of technology within computer-mediated interaction, these virtual connections have given rise to unwanted attention from others online such as harassment. Nicol, (2012) denotes anti-social behaviour has a disruptive impact on others and may be associated with adverse psychological and emotional outcomes comparative with face-to-face harassment.

Online Trolling

Trolling is a form of malicious behaviour directed towards users online, with the intent of promoting negative interactions and disrupting communications for enjoyment (Barton, 2016; Binns, 2012; Coles & West, 2016). Buckels et al., (2014) define trolling as the practice of anti-social behaviour which is “deceptive, destructive, or disruptive manner in a social setting on the internet with no apparent instrumental purpose” (p.97). For example, individuals who troll post messages online with the intent of antagonising others such as posting cruel comments about the deceased on Facebook memorial pages, the impact creating emotional distress among grieving commenters (Phillips, 2011).

Within deviance literature, researchers suggest that those who troll are motivated via the intention of causing havoc to disrupt online communications. Moreover, trolls are afforded access to cause havoc within group community forums and may aggress new targets for their pleasure and entertainment. Furthermore, anonymity online affords trollers the ability to disrupt communications and avoid offline consequences (Hardaker, 2010; Swan, 2016).

Hardaker, (2010) argues there are four inter-related dimensions of online trolling; firstly, the use of deception via anonymity to deliberately deceive others, whereby, trollers masquerade as sincere members of an online community to infiltrate the group. Secondly, the use of disruption to goad users into pointless circular

discussion for amusement with the intention of refocusing the attention back on the troller. Thirdly, the use of aggression to deliberately upset and aggravate others to encourage retaliation and lastly, trollers consider their efforts successful when the desired emotional outcome has been elicited.

Although, some forms of trolling have been found to challenge the status quo and protect marginalised groups across the political divide to promote ideological objectives and social change. For example, cyber-activism for gender equality in protecting women's rights (Puente & Jiménez, 2011).

However, online trolling has become of concern with increased internet usage and time spent online.

In a survey by YouGov USA (as cited in Gammon, 2014), over a quarter of Americans have trolled others online and YouGov denoted that 43% of young people in Great Britain have also engaged in trolling behaviours. Although trolling poses a problem for technology companies such as Google, Amazon and Facebook, the psychological constructs investigating the motivations as to why individuals engage in anti-sociality online is largely overlooked, and extensive studies are thus far limited. Furthermore, research has found that dark personality characteristics may predict online trolling behaviours (Buckels et al., 2014; Craker & March, 2016; Lopes & Yu, 2017).

Chapter 1: Literature Review

Defining the Dark Triad of Personality Characteristics

The dark triad of personality characteristics is identified by three malevolent traits known as Narcissism, Machiavellianism and subclinical Psychopathy (Buckels et al., 2014). These transgressive behaviours have been known to avert social norms and have been the subject of debate via increased anti-sociality via internet crimes such as identity theft and fraud and cyber-bullying and harassment of others online (Swan, 2016). The triad constellation of sub-clinical traits is moderately inter-relatable as each characteristic has been found to overlap. For example, Muris, Merckelbach, Otgaar, and Meijer, (2017) found this overlay of intercorrelations in 91 research studies encapsulating the Dark Triad of personality.

Furthermore, results from such studies indicate that these characteristics are positively associated with each other. These traits share commonalities within trait personality, such as “disagreeableness, honesty-humility, lack of empathy and interpersonal antagonism” (Furnham, Richards, & Paulhus, 2013, p.204).

However, Muris et al., (2017) found that a hierarchal assembly of traits exist within the Dark Triad with Psychopathy as the leading characteristic of malevolence, suggesting Narcissism and Machiavellianism as subordinate traits within the hierarchy.

Empirical studies to understand the implications of the Psychopathy measure on the Dark Triad in relation to trolling behaviours has been sparse, especially as inter-correlation studies have identified Psychopathy as a primary trait within deviancy online (Muris et al., 2017). To date, research has focused on the dark tetrad which includes the fourth measure of Sadism as predictive for trolling (Buckels et al., 2014). Therefore, further research is needed on the predictive powers of Psychopathy on trolling behaviours.

As Narcissism, Machiavellianism and Psychopathy are separate entities despite shared inter-relatability, each characteristic has been widely researched and thus warrants definition;

Studies Defining Narcissism.

Narcissists display an aggrandised personality via self-enhancement with an egotistical view of one's self-attributes. These characteristics involve exploiting others for personal gain, and an authoritative superiority complex (Furnham et al., 2013; Miller, Campbell & Pilkonis, 2007; Muris et al., 2017).

Ackerman et al., (2011) posits that Narcissists who score highly in Grandiose Exhibitionism such as the need to display exhibitionistic behaviours and self-absorption may bully to gain attention online with the goal of being the centre of the conversation. Of which, methods involve taunting others via posting shocking statements online and aggressing others. Craker & March, (2016) found that this type of negative social influence is an intrinsic motivator for those on Social Networking Sites (SNS) with the use of Facebook. For this reason, Narcissistic personalities are prone to aggression after threats are perceived via the ego in the event of a perceived failure (Stucke & Sporer, 2002).

For example, Ferenczi, Marshall, & Bejanyan, (2017) argue that narcissists may feel aggressed and react with hostility to comments which are perceived as negative on SNS, increasing the proclivity of trolling online. However, it may be contended that the rise in technology and usage of social media platforms, has contributed to Narcissism. Twenge & Foster, (2010) postulate that over the past twenty years the popularity of the smartphone has birthed a rise in the 'selfie' phenomenon, whereby individuals post self-taken photographs on SNS for continual validation of the ego. As such, Grandiose narcissism was found to positively correlate with time spent on SNS in a meta-analytic study of 12,000 respondents. Individuals with this trait frequently posted to their networks with regular status updates, numerous selfie photographs and attained larger friendship networks than their non-narcissist counterparts (McCain & Campbell, 2016).

However, not all expressions of narcissism are maladaptive. Research indicates that narcissists can form a positive first impression in job interviews and new dating relationships, although these positive encounters typically involve brief social interactions (Back, Schmukle, & Egloff, 2010; Muris et al., 2017; Delroy L Paulhus, Westlake, Calvez, Harms, & -Lincoln Paulhus, 2013).

Studies Defining Machiavellianism.

Machiavellianism is outside the personality disorder spectrum with a different etiology. It is defined by the ability to manipulate others via any means necessary to produce the desired outcome for personal gain (Furnham et al., 2013). Individuals scoring highly with this trait are characteristically, callous, unprincipled and disingenuous towards the feelings of others (Christie & Geis, 2013). Wai & Tiliopoulos, (2012) argue that the drive to achieve the desired outcome regardless of how, suggests a lack of emotional regulation and self-awareness which facilitates the ease of manipulation and exploitation of others. Furthermore, due to emotional deregulation, Machiavellians tend to score lowly in empathic scales with cynical indifference to morality (Back et al., 2010; Zeigler-Hill & Vonk, 2015).

However, Machiavellians may understand a potential victim's situational experience but lack the emotional empathy to support it. The efficacy of this allows the high scoring Machiavellianist to manipulate and exploit the situation strategically and ignore the damage caused as a result (Massey-Abernathy & Byrd-Craven, 2016).

Machiavellians online are highly self-monitoring utilising tactics to ensure they are perceived well by others and are motivated by self-promotion on SNS. Such tactics involve, either a charming persona or guilting others via shame or embarrassment to promote their interests (Abell & Brewer, 2014). Self-monitoring and impression management allow the Machiavellianist to avoid detection and its related consequences, such as damage to credibility and reputational status within the social group (Rauthmann, 2011; Rosenberg & Egbert, 2011).

Studies Defining Psychopathy.

Mokros et al., (2015) define the Psychopathic personality as an individual who is devoid of empathy, a person of high impulsivity, possessing grandiosity with superficial charm. These individuals exercise severe anti-sociality and lack of remorse towards their victims (Hare, Hart, & Harpur, 1991; Le, Woodworth, Gillman, Huton & Hare, 2017).

Unlike Narcissism and Machiavellianism within the dark triad, psychopathic personalities are highly destructive to those around them, immoral and often violent (Hare, 1994; Mokros et al., 2015). The Psychopathic personality exists on both a clinical and sub-clinical scale. The Psychopathy Checklist-Revised, abbreviated to the

(PCL-R) is an established clinical diagnostic tool which is a reliable and recognised instrument for measuring psychopathic tendency over a person's lifetime (Book, Forth, & Clark, 2013; Hare, Black, & Walsh, 2013). A meta-analysis posited that this checklist was "unparalleled and unprecedented" across all studies for predicting a person's safety risk in respect of another. Moreover, the (PCL-R) diagnostic tool is a strong predictor of violent crime and recidivism in psychopathic behaviours (Salekin, Rogers, & Sewell, 1996).

However, the subclinical traits of psychopathy are considered within the typical trajectory of traits within the spectrum. Such traits involve those who are impulsive risk-takers, have poor self-control and lack empathy for others (Paulhus & Williams, 2002). The subclinical range of traits can be found on the Revised Self-Report Psychopathy Scale by Robert Hare and is a reliable indicator of antisocial misconduct (Hare & Neumann, 2009).

Empirical Studies on the Dark Triad

The study of the dark triad has gained research attention with over 300 independent reports published on the subject in recent years (Furnham et al., 2013). Paulhus & Williams, (2002) devised the theory of the dark triad which expanded to include the sadism trait evolving to create the dark tetrad constellation of personality. These personality characteristics are known to be consistent with behaviours such as callousness, apathy and manipulation (Jones & Paulhus, 2014). Furthermore, these traits have been found to correlate with the propensity for online trolling (Buckels et al., 2014). For example, both personality constructs of Machiavellianism and Psychopathy express overlapping criminal behaviours online such as illegal hacking and cyber-trolling. Whereas, Narcissism was found to have little correlation to online trolling (Lopes & Yu, 2017).

Moreover, Nevin, (2015) argues that darker personality traits are related to a maladjusted or dysfunctional sense of morality. As each trait within the Dark Triad is demonstrated in diverse ways within cyberspace impacting online trolling behaviours, therefore this warrants further exploration via past research. Many studies have examined the personality constructs of the dark triad as a parameter for determining key personality traits behind those who troll others online.

For example, Buckels et al., (2014) recruited 1215 respondents to complete a survey on internet commenting styles, using personality inventories to identify commonalities within personality traits. The propensity to troll was assessed via questions on enjoyment level of online trolling and commenting frequency online. Findings indicated strong associations between the dark tetrad of personality and online trolling on measures of commenting enjoyment and identity. Moreover, Machiavellianism and Psychopathy scored strongly for trolling, with Sadism indicating the most reliable link with online trolling behaviours.

However, Muris et al., (2017) argue that the subset of the dark triad; Narcissism, Machiavellianism, and Psychopathy, is unable to encapsulate all malevolence within human behaviour. A meta-analysis found inadequate reasons for the specific triad characteristics to operate in concert with one another as the primary determinants in anti-sociality. Furthermore, suggesting the dark triad as too simplistic a model to explain malevolent behaviours. Muris et al., (2017) refuted the deployment of self-reporting measures on personality scales for the dark triad, as true dark triad personalities possess the ability to mask unappealing facets of behaviour. Suggesting, a multi-modal model of personality assessment with longitudinal studies for the predictive powers of the dark triad.

Although, Buckels et al., (2014) study on the dark tetrad indicated strong relationships between commenting frequency, trolling enjoyment levels and behaviours, which contributes to previous research on links between increased technology usage and anti-sociality online.

For example, the dark triad has been found to have associations with deviancy via SNS, individuals with the dark triad of personality were found to use SNS as a medium of choice for malicious acts of deviancy online. Moreover, Rosen, Whaling, Rab, Carrier, & Cheever, (2013) reported attitudes towards technology and excessive SNS usage might predict clinical symptoms of personality disorder. Specifically, on Facebook; impression management is related to depression and mania, Facebook usage such as overactivity or lack of activity indicated narcissistic tendencies, compulsivity and anti-sociality online.

However, Carpenter (2012) argues that narcissism is encouraged on SNS by the nature of the sharing platform. For example, self-promotional behaviours such as grandiose exhibitionism were exacerbated by Facebook activities such as self-

presentation via photo sharing for likes, status updates and growing large networks of connections for friendship. Entitlement exhibitionism was associated with anti-sociality via a lack of responses to one's feed or rebuttal to negative comments regarding the user online.

DeAndrea, Tong, & Walther, (2010) denote that further research is required to understand dark personality characteristics to curtail anti-sociality on Facebook. Understanding the personality profile of individuals using SNS may lead to enhanced and beneficial sharing environments for all to enjoy.

Present Study

A cross-sectional method was chosen to assess the Dark Triad of personality characteristics within an adult population in relation to trolling behaviours online. The predictor variables deployed for measurement were Narcissism, Machiavellianism and Psychopathy, the three characteristics of the Dark Triad of personality were chosen to research gaps within current research by investigating the Dark Triad for online trolling and negated the Dark Tetrad characteristic of Sadism. Trolling was the criterion variable for measurement.

To date, there has been limited empirical research to understanding the role of Psychopathy on the Dark Triad in relation to trolling behaviours. Moreover, previous studies have identified the Dark Tetrad exclusively as a predictor of trolling online inclusive of the Sadism measure, negating the cluster of the Dark Triad on trolling behaviours (Buckels et al., 2014). Therefore, further research is needed on the predictive powers of the dark triad for understanding online trolling behaviour and the predictive powers of Psychopathy on trolling.

Therefore, this research aims to explore:

Research Question

“Is there a relationship between the dark triad of personality traits and likelihood to troll others online?”

Hypotheses**Hypotheses 1.**

There will be a significant correlation between the 3 dark traits of personality (Narcissism, Machiavellianism and Psychopathy) and Online Trolling. 2-tailed

Hypotheses 2.

The 3 dark triad personality traits (Narcissism, Machiavellianism and Psychopathy) will be a statistically significant predictor of online trolling. – 1 tailed

Hypotheses 3.

There will be a significant correlation between Frequency of Internet Usage and the three Dark Triad personality traits (Narcissism, Machiavellianism & Psychopathy).

Chapter 2: Methodology

Design

The proposed study will employ a quantitative design via a correlational analysis to establish the relationship between the independent variables (Dark Triad Characteristics) and the dependent variable of (Online Trolling). This statistical technique is typically used to quantifiably identify relationship strength between two variables (Pallant, 2013). The variables of interest will be measured via self-reporting in an online survey.

Participants

This study consisted of ($N=131$) participants from the world wide web who were invited to volunteer for participation in an online survey via SNS. The participant population was over the age of 18 years old as a pre-requisite for participation, and beyond being of adult consent, age specifics were not a factor in this study.

One hundred and thirty-one participants completed this study, consisting of 57 Males and 74 Females. Participants consisted of students within a third level Irish education institution, employees in an International technology company and those recruited online via a shortened hyperlink. Participants were uncompensated for their time. Participants were recruited via convenience sampling to enable efficient access to a wider population by completing an online survey via Google Forms. Inclusion criteria were those who actively engaged in social media and online communities.

Materials

The Short Dark Triad Scale (SD3).

A 27 Question measurement scale was deployed to assess Narcissism, Machiavellianism and Psychopathy (Paulhus, 2013). In this study, reliability coefficients for each scale were analysed using Cronbach Alpha reflective of each characteristic and the survey as a whole.

The Narcissism subscale consisted of 9 items ($\alpha = .16$), the Machiavellianism subscale of 9 items consisted of ($\alpha = .76$) and the Psychopathy subscale of 9 items consisted of ($\alpha = .54$). The Full Survey of 32 items inclusive of the GAIT scale was found to be highly reliable ($\alpha = .82$).

These questions were rated on a Likert scale ranging from ‘strongly agree’ to ‘strongly disagree’. Paulhus, (2013) via the Short Dark Triad scale (SD3) provided examples of questions in a self-reporting inventory. For example, respondents for Narcissism were asked: “I know that I am special because everyone keeps telling me so” (p.3). Examples of questions asked for the Machiavellianism scale were: “It’s wise to keep track of information that you can use against people later.” (p.3) and for the psychopathy scale: “Payback needs to be quick and nasty.” (p.3). (See Appendix G).

Paulhus, (2013) reported that the SD3 was a valid and predictable measure of the dark triad of personality characteristics reporting Narcissism ($\alpha = .77$), Machiavellianism ($\alpha = .78$) and ($\alpha = .80$) for Psychopathy. Subsequent studies reported the SD3 as a reliable measure of the validity of the SD3 (Baughman, Dearing, Giammarco, & Vernon, 2012; Buckels et al., 2014; Furnham et al., 2013; Jones & Paulhus, 2014; Delroy L Paulhus, 2014).

The Global Assessment of Internet Trolling (GAIT).

The GAIT scale with 4-items for measurement was reported with an ($\alpha = .82$) reliability score when used by (Buckels et al., 2014) to identify “Trolling behaviour, identification and enjoyment” (p.2). Four main questions were interspersed among the SD3 subscales (See Appendix E).

Examples of questions for inclusion consisted of “I enjoy Grieving other players in multiplayer games” and “I like to troll people in forums or the comments section of websites” (Buckels, 2014, p.3). These questions satisfied the second hypothesis on trolling behaviours. The initial three items assessed trolling experience and propensity to enjoy aspects of trolling; the fourth item assessed identification with trolling behaviours and Internet subcultures (Buckels, 2014).

These questions were rated on a Likert scale ranging from ‘strongly agree’ to ‘strongly disagree’ (Buckels, 2014). In this sample, reliability coefficients for the GAIT subscale of 4 items for trolling consisted of ($\alpha = .82$) reliability score. The Full Survey of 32 items in this study was found to be highly reliable ($\alpha = .82$) (See Appendix H).

Procedure

Participants were invited to participate 6-10 minutes of time in an online study over email and SNS such as LinkedIn and Facebook. This invitation detailed all research information, such as the purpose of the research, advantages and disadvantages and ethical considerations to protect wellbeing. No financial motivation was given to participate (See Appendix A & B).

Respondents were then directed towards a hyperlink to an online consent form which described their rights as research participants, upon deciding to participate in the study voluntarily, they were asked to read the form carefully and tick several boxes to issue consent and acknowledgement of their rights for ethical protection. Participant's rights were protected as they were notified of the following; the right to withdraw, voluntary participation, right to anonymity as information collected provided anonymised statistical data and kept confidentially by the researcher (See Appendix B & C).

Further precautions were taken to protect participants right to withdraw at any time. Before proceeding to the survey, respondents were asked to provide a participation ID which consisted of selecting initials such as the first two letters of their name and date of participation. For example, SL140418. Respondents were asked to email and quote their participation ID to the researcher or supervisor if they chose to withdraw. Ethical consent boxes were mandatory on the consent form if full consent was issued, respondents were taken to the main 31-item survey (See Appendix B, C & D).

The survey asked respondents to which extent they agreed or disagreed with 31 statements on a Likert Scale ranging from strongly disagree to strongly agree. Respondents were informed that questions may be omitted if they felt uncomfortable and to proceed to the next and that the questions were not to be taken as psychological advice. Respondents were also asked to indicate gender preference and frequency of internet usage to aid the research hypotheses (See Appendix E).

After completion of the 31-item survey, respondents were directed to the debrief information to close out the research (See Appendix F). Participants were thoroughly debriefed on the aims of the research, reminded of how to withdraw and informed that no research outcomes would be shared due to the sensitivity of the data collected for ethical reasons. Furthermore, participants were directed to a suite of qualified mental

health establishments if any distress was caused as a result of survey participation. Lastly, participants were reminded that anonymised statistical data would be kept in a password protected folder on the researcher's laptop for up to five years as per guidelines from the Psychological Society of Ireland ("The Psychological Society of Ireland (PSI)," n.d.)

Ethics

Ethical considerations were followed for the protection of participants under guidelines for Internet-Mediated Research (British Psychological Society, 2013). Furthermore, this study was approved by the Department of Technology and Psychology Ethics Committee (DTPEC).

As aforementioned, all ethical guidelines were followed to ensure the psychological protection of participants during and after this study. For example, participants were aware of the aim of the study of which all ethical rights were explained in the Information sheet (See Appendix A & B) and within the consent form (See Appendix C) and asked to tick a box to issue consent before beginning the survey. Moreover, participants were asked to provide their participant ID and understood their information would be anonymised as statistical group data and therefore results post survey could not be shared. Lastly, participants were fully debriefed post study and informed of professional mental health services to protect their wellbeing and also informed that the researcher was not qualified to dispense psychological advice.

Chapter 3: Results

Descriptive Statistics

Table 1 represents the descriptive statistics for each of the variables.

The Short Dark Triad Scale (SD3) was administered to assess the Dark Triad of personality traits: Machiavellianism, Narcissism, and sub-clinical Psychopathy (Paulhus, 2013). There were 27 items, with 9 items assessing each sub-scale of the trait. The average score of the 9 items per Dark Triad Trait was calculated for each individual.

The trolling experience variable has been calculated by taking the average of the remaining four items via the Global Assessment of Internet Trolling Scale (Buckels et al., 2014).

Composite scores range from 1 to 5 on each Dark Triad characteristic with a higher score indicating a higher level of retaining the specified trait. Descriptive statistics were calculated for the composite variables including the mean, median, mode, standard deviation and variance.

Table 1.

Descriptive Statistics Summary of the Composite Scores

Descriptive Statistics	Machiavellianism	Narcissism	Psychopathy	Trolling Experience
N	131	131	131	131
Mean	2.86	2.86	2.35	1.4981
Median	2.78	2.89	2.22	1.2500
Mode	3.44	2.89	2	1.00
Std. Deviation	0.63	0.38	0.51	.71622
Variance	0.40	0.14	0.26	.513

Frequency of Internet Usage.

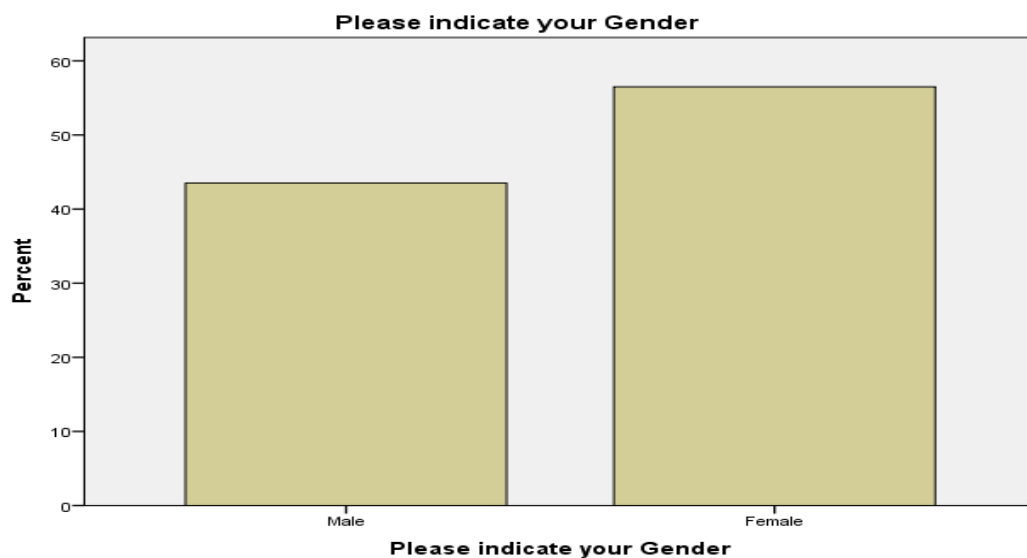
One hundred and thirty-one participants completed this study, consisting of 57 males and 74 females as shown in Table 2. This sample indicates that Females reported a higher frequency of internet usage over Males as shown in Figure 1.

Table 2.

Percentage by Gender of Frequency of Internet Usage

Gender	Frequency	Percent
Male	57	43.5
Female	74	56.5
Total	131	100.0

Figure 1: *Percentage by Gender of Frequency of Internet Usage*



The participants were asked how often they used the internet and it was observed that 33.6% ($N = 44$) use the internet every hour and they can be categorized as moderate users.

46.6% ($N = 61$) use the internet all day long, and they can be classified as heavy users. The light users who use the internet 2 to 4 times a day were only 18.3% ($N = 24$) and 1.5% ($N = 2$) were extremely light users of the internet who took part in the study, (See Table 3).

The frequency of internet usage has been depicted in Table 3 indicating the majority of participants utilise the internet all day long.

Table 3

The frequency of Internet Usage

Internet Usage	Frequency	Percent
One a day or less	2	1.5
2-4 times per day	24	18.3
Every hour	44	33.6
All day long	61	46.6
Total	131	100.0

The frequency of internet usage has been depicted visually in Figure 2 indicating the majority of participants are considered heavy users who utilise the internet all day long.

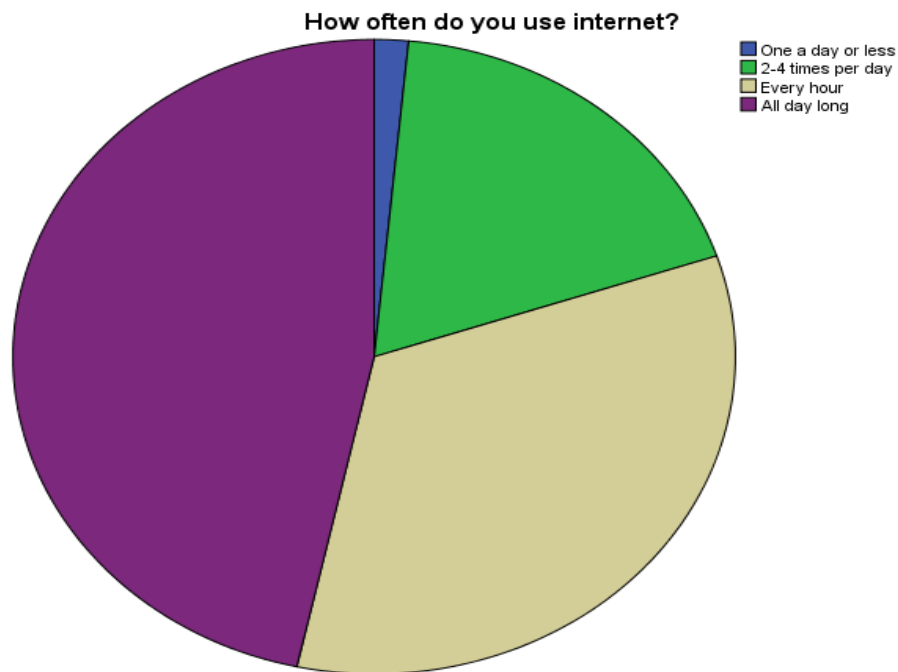


Figure 2: *Frequency of Internet Usage from extremely light to heavy usage.*

Reliability Statistics

As shown in Table 4, reliability coefficients for each scale were analysed using Cronbach Alpha reflective of each characteristic and the survey as a whole. This is calculated to check the consistency and reliability of the Likert subscales as a psychometric instrument.

The Narcissism subscale consisted of 9 items ($\alpha = .16$), the Machiavellianism subscale of 9 items consisted of ($\alpha = .76$), and the Psychopathy subscale of 9 items consisted of ($\alpha = .54$). Although Narcissism falls below the requirement of internal consistency as it is below 0.50, the Full Survey of 32 items inclusive of the GAIT scale was found to be highly reliable ($\alpha = .82$) therefore, the survey as a whole is acceptable and found to be reliable and internally consistent.

Table 4.

Reliability using Cronbach Alpha for internal consistency of Personality Subscales.

Variables	Subscale Items	α
Full Survey	32 Items	0.82
Narcissism	9 Items	0.16
Machiavellianism	9 Items	0.76
Psychopathy	9 Items	0.54
Trolling Experience	4 Items	0.82

Inferential Statistics

Hypotheses 1

There will be a significant correlation between the 3 dark traits of personality (Narcissism, Machiavellianism and Psychopathy) and Online Trolling. 2-tailed

The first aim of this study was to identify if there was any significant correlation between the Dark Triad of Personalities and Trolling experience.

Results from Table 5 indicate that the findings are statistically significant for a correlation between the Short Dark triad and online trolling using a Pearson Co-efficient. Findings are positively related to the trolling experience and are also statistically significant at the 0.01 level (2-tailed).

The below table represents the Pearson correlation coefficient with trolling experience. These results suggest that all correlations are positively related to the trolling experience with Psychopathy having the highest correlation factor with trolling behaviour at 53.9%, followed by Machiavellianism (40.3%) and Narcissism (23.1%).

Therefore, this test reports the three dark triad traits are statistically significant at the 0.01 level (2-tailed). Findings indicate a rejection of the null hypothesis as there is a significant and positive correlation between the dark triad of personalities and trolling experience.

Table 5.*Pearson correlation coefficient with trolling experience*

Variables		TYPE of Correlation	Trolling Experience
Composite	score	Pearson Correlation	.403**
Machiavellianism		Sig. (2-tailed)	.000
		N	131
Composite	score	Pearson Correlation	.231**
Narcissism		Sig. (2-tailed)	.008
		N	131
Composite	score	Pearson Correlation	.539**
Psychopathy		Sig. (2-tailed)	.000
		N	131

Hypotheses 2

The three dark triad personality traits (Narcissism, Machiavellianism and Psychopathy will be a statistically significant predictor of online trolling. – One tailed

The second aim of this study was to explore the relationship between the Dark Personality traits as a significant predictor of Trolling experience.

For instance, is there a correlation between the dark triad of personality characteristics which leads to trolling online?

An ANOVA test for the one-tailed analysis indicates that all three traits are statistically significant for trolling.

However, Individually, only Psychopathy is significant for trolling, although when combining all three traits with the ANOVA score, we can reject the overall null hypothesis. These findings are explained in the tables below.

Table 6 indicates a multivariate regression analysis was conducted to test hypothesis 1 specifying the trolling experience score as the dependent variable, and scores of the Dark Personality traits as the independent variables.

These ANOVA findings indicated that the Dark Personality traits had an overall significant influence on trolling scores, $F(3, 127) = 18.43, p < .001$.

Table 6.

ANOVA. Dark Personality Traits on Trolling Scores.

Model	Sum Squares	of df	Mean Square	F	Sig.
Regression	20.228	3	6.743	18.43212719	.000
Residual	46.459	127	.366		
Total	66.687	130			

Table 7 indicates the summary of results and coefficients of the regression analyses below. The coefficient of Psychopathy at 0.50 ($t = 5.03$, $p < .001$), was statistically significant suggesting that people with a higher score on the Psychopathy trait would agree more with trolling comments. Furthermore, the coefficient of Psychopathy was high and positively associated with trolling scores. Whereas, the coefficient of Narcissism is negatively related with trolling scores and is also statistically insignificant, this indicated that this trait is not related to trolling experience. The coefficient of Machiavellianism is also positively related but is insignificant as the p-value ($0.17 > 0.05$) is greater than 5 % level of significance.

Table 7.

Summary of Results and Coefficients of Regression Analysis.

Composite Scores	Coefficients Beta	T	Sig.
(Constant)		-.312	.755
Machiavellianism	.131	1.350	.179
Narcissism	-.087	-.986	.326
Psychopathy	.502	5.030	.000

These findings indicate that psychopathy is associated with trolling behaviour compared to Narcissism and Machiavellianism. Therefore, we reject the null hypothesis for psychopathy as this trait indicates a positive and significant relationship with trolling behaviour which suggests psychopaths may enjoy various kinds of trolling.

Hypotheses 3

There will be a significant correlation between Frequency of Internet Usage and the three Dark Triad personality traits (Narcissism, Machiavellianism & Psychopathy).

The third aim of this study was to explore if there was any significant correlation between the Dark Triad of Personalities and Frequency of internet usage.

A Pearsons Correlation found that results were significant for Machiavellianism and Narcissism but not for Psychopathy, between the frequency of internet usage and the three Dark Triad traits.

Table 8 indicates the Pearson correlation coefficient with Frequency of internet usage.

These findings suggest that all the traits except Psychopathy are positively related to the Frequency of internet usage. Except Psychopathy, Narcissism and Machiavellianism are statistically significant at the 0.05 level (2-tailed).

Table 8.

Summary of Results and Coefficients of Regression Analysis.

Variables	Type of Correlation	How often do you use internet?
Composite score Machiavellianism	Pearson Correlation	.186*
	Sig. (2-tailed)	.033
	N	131
Composite score Narcissism	Pearson Correlation	.180*
	Sig. (2-tailed)	.040
	N	131
Composite score Psychopathy	Pearson Correlation	.048
	Sig. (2-tailed)	.586
	N	131

Therefore, these findings suggest, that except Psychopathy, the remaining two Dark Triad personalities have a positive and significant correlation with frequency of internet usage. Therefore, we can reject the null hypothesis for Narcissism and Machiavellianism, although we cannot reject this hypothesis for Psychopathy.

All statistical information was analysed using a statistical software package known as SPSS to run analyses (IBM Corp. Released, 2015).

Chapter 4: Discussion

The present research was to establish if there was a relationship between the Dark Triad of Personality Characteristics and online trolling. To date, there has been limited empirical research committed to understanding the phenomenon of online trolling behaviours and the dark triad of personality characteristics. Previous studies have considered the dark triad and only one study to date has identified the dark tetrad exclusively as a predictor of trolling online behaviours, negating the cluster of the dark triad, in particular, the Psychopathy measure for trolling (Buckels et al., 2014).

However, this study, found a significant correlation in 131 participants using two personality inventories SD3 and GAIT when exploring the short dark triad and one's likelihood to troll others online. Reliability coefficients were calculated using Cronbach Alpha for the whole scale, of which the overall analysis indicated high reliability ($\alpha = .82$).

The significant findings and contribution to research are explained on the outcomes of this study:

H1 – Dark Triad is Significant for Online Trolling.

H1 denotes the results are statistically significant for a correlation between the Short Dark Triad (SD3) and Online Trolling using a Pearson Co-efficient. These findings indicate a rejection of the null hypotheses as there is a significant and positive correlation between the dark triad of personalities and trolling experience at the 0.01 level (2-tailed). Furthermore, this finding agrees with subsequent research that dark personality characteristics may predict online trolling behaviours (Buckels et al., 2014; Craker & March 2016; Lopes & Yu, 2017). Moreover, the outcomes of this research contribute to existing literature by highlighting that the dark triad as a cluster of characteristics, is associated with online trolling. Whereas, the Buckels et al., (2014) study found that the Dark Tetrad, which identifies the fourth measure of Sadism, as the leading predictor of online trolling behaviours. The sadism measure was found to relate to how much an individual derived enjoyment and sadistic pleasure when trolling others (Buckels et al., 2014). This study also deployed the same personality scales, the SD3 and GAIT inventories. Although, the Buckels et al., (2014) study also utilised the Big

Five inventory and the CAST inventory for Sadism which may account for Sadism showing such robust scoring for trolling behaviours online.

H2 – Psychopathy a Dominant Factor in Trolling.

Hypotheses (H2) predicted that there would be a statistically significant correlation between the Dark Triad and Online Trolling and findings indicated support for this outcome at the one-tailed level. However, individually, only Psychopathy was found to be the primary predictor of online trolling behaviours. This finding has received empirical support in recent literature that Psychopathy is indicative of trolling behaviours, (Buckels et al., 2014; Goodboy & Martin, 2015; Nevin, 2015). Furthermore, it was found in both the current study and in previous studies that Psychopathy is a unique predictor of GAIT scores (Buckels et al., 2014).

Moreover, the role of sub-clinical Psychopathy as a socially aversive trait warrants vigilance when operating in online environments such as on SNS, as numerous studies have reported that Psychopathy is a predictor of anti-sociality online. For example, Jones and Paulhus, (2010) argue that aggression is predisposed in Psychopaths and may lead to aggressive behaviour online within trolling and cyber-bullying. Baughman et al., (2012) reported Psychopathy had the most robust association with traditional bullying which may lead to a propensity to troll others in cyberspace.

Furthermore, Hare & Neumann, (2009) describe that psychopathic individuals can wreak havoc on the lives of others online due to lack of empathy and self-control, as such these traits are a reliable indicator of anti-social conduct. Characteristically psychopathic individuals exercise severe anti-sociality and lack of remorse towards their victims and trolling may be considered an enjoyable pass time (Hare, Hart, & Harpur, 1991; Le, Woodworth, Gillman, Hutton & Hare, 2017).

Gender variations in Psychopathy and Anti-sociality Online.

Previous literature indicates that psychopathy within online trolling is higher in Males than in Females. For example, research by Nevin, (2015) purports younger Males have higher cyber-psychopathy and anti-sociality online over their female counterparts. The current study negated gender variations within the dark triad and propensity to troll online, which serves as a potential limitation to review for future research. Although this study indicated a higher participation level of Females more than Males by 30%,

further research could examine gender differences within the dark triad and psychopathy individually to assess propensity to troll others online.

Hypothesis 2 indicated that Psychopathy is a primary factor for trolling, although an ANOVA test indicates that all traits are statistically significant factors associated with trolling behaviour (1-tailed). Within H2, the coefficient of Narcissism was negatively related to trolling scores and is statistically insignificant. This indicates that this trait is not related to trolling experience. This finding coincides with existing literature that Narcissism individually is not a pre-requisite for online trolling (Buckels et al., 2014), however within the dark triad as cluster analyses, it may be a contributing factor. For example, Ferenczi et al., (2017) argue that Narcissists may react with hostility towards negative comments received via SNS such as Facebook, which may increase the propensity to troll online. Furthermore, those who score highly within the SD3 scale for Narcissism possess traits that lend well to the dark triad, with characteristics such as, exploiting others for personal gain and authoritative superiority complex (Furnham et al., 2013; Miller et al., 2007; Muris et al., 2017).

Machiavellianism within H2 was also found to be insignificant and unrelated to trolling, unlike Psychopathy. This trait in isolation coincides with current literature as Machiavellians are typically manipulative and exploitive of others and found to be less malicious than those with psychopathic traits (Buckels et al., 2014). Moreover, Christie & Geis, (2013) found characteristically, Machiavellians may be callous, and disingenuous towards the feelings of others to achieve desired outcomes and so these characteristics have overlap with similar traits within the dark triad. Researchers suggest that the self-monitoring Machiavellians are skillfully able to avoid detection and its related consequences, such as damage to credibility and reputation within the social group. Therefore, the cost-benefit of trolling may not be advantageous to the Machiavellian who cares about how they are viewed online (Rauthmann, 2011; Rosenberg & Egbert, 2011).

H3 – Psychopathic Individuals Troll Regardless of Internet Usage.

Hypotheses (H3) predicted that there would be a correlation between the Dark Triad and frequency of internet usage and findings indicate support for this outcome at the two-tailed level. All trait correlations were positively related except Psychopathy. This finding suggests that dark triad individuals are likely to spend more time online than individuals devoid of these traits. In this study, Psychopathic individuals may troll online superfluous of how many times per day they use the internet or interact within chat-rooms.

However, contrary to Psychopathy, Narcissism was found to have a significant and positive correlation with frequency of internet usage. This corresponds to meta-analytic research via McCain & Campbell, (2016) who reported that those high in the trait of Grandiose-Narcissism were found to positively correlate with time spent on SNS. The need for continual social validation via SNS was a factor in the increased frequency of internet usage within the meta-analytic study. Machiavellians were similar with significant correlations to the frequency of internet usage. Furnham et al., (2013) suggest that Machiavellians utilise others online for manipulative purposes for personal gain and enjoy spending time online (Furnham et al., 2013).

Contribution to Research – Strengths

Firstly, the present study empirically contributes to the recent body of research as Psychopathy was found to be a significant predictor of online trolling, unlike Narcissism and Machiavellianism. Whereas, the Buckels et al., (2014) study found that the Dark Tetrad, with the fourth measure inclusive of Sadism, was the leading predictor of online trolling behaviours.

Secondly, this study identifies that Dark Triad personalities are related online trolling behaviours and that possessing all three traits are significant in the propensity to troll online over those who negate Dark Triad qualities.

Thirdly, Psychopathic individuals may troll online regardless of internet usage, whereas, Narcissism and Machiavellianism traits were found to have significant and positive correlations for the frequency of internet usage.

Limitations

A limitation which is also present in other studies within the literature is the measure of online trolling behaviour (Buckels et al., 2014; Lopes & Yu, 2017; Nevin, 2015). For example, the measures deployed were indirect, and measured individual's agreement with trolling behaviours made *a priori* from self-evident evaluations, this fails to account for actual trolling behaviours. However, due to ethical consideration, direct measures were not possible for this study. However, future studies would benefit from direct measures of online trolling behaviours via actual measures of trolling comments made online.

Secondly, the reliability score of Narcissism is considered low and serves as a limitation of this study ($\alpha = .16$). Future studies would benefit from factor analysis to reduce dimensionality providing a better Cronbach Alpha value to increase the efficacy of the reliability score. However, the 31-item survey was found to be highly reliable overall ($\alpha = .82$).

Thirdly, this study fails to account for the intrinsic motivations of trolling behaviours across multiple cohorts. To date, research has focused on correlational measures of traits rather than the underlying motivational factors which lead to trolling (Furnham et al., 2013; Muris et al., 2017). Future research could explore the underlying motivations of Psychopathic individuals via different cohorts such as age, gender and occupation within online trolling. For example, correlations for psychopathy may be examined within students online to understand the motivations and impact of online trolling.

Lastly as mentioned, the current study negated gender variations within the dark triad and propensity to troll online, gender variations within psychopathy have been linked with anti-sociality online (Muris et al., 2017; Nevin, 2015).

Future Research

Implications for future research may examine the Dark Triad specific to occupation. For example, authoritative occupations such as the police force, politics and corporate institutions have been found to have higher incidences of psychopathic individuals operating in positions of trust (McKee, Waples, & Tullis, 2017; Paulhus, 2014; Roczniowska & Bakker, 2016). Moreover, job screening using reliable personality inventories such as the SD3 may aid in understanding the characteristics

which motivate individuals in various use-case scenarios specific to the job role. Roeser et al., (2016) found that screening for potential scenarios may highlight transgressive behaviours in advance for specific job roles. Therefore, utilising the SD3 via this method may assist in assessing suitability for high-level appointments with the responsibility to the public.

Furthermore, understanding the intrinsic motivators behind the dark triad would allow more vigilance from technology platforms to facilitate a safer environment for computer-mediated interaction. For example, a practical application of applying dark triad inventories may ask new members of SNS to complete a brief survey to understand risk levels of whether individuals have the propensity to troll others via their personality profile. Of course, strict ethical guidelines considered, individuals may typically engage. However, practical measures may be put in place to ensure a safer environment for all members within the social group that is ethically responsible and protects the right to free speech.

Jones and Paulhus, (2010) suggest that dark triad traits are considered socially aversive, and it may prove easier to disguise undesirable traits via non-disclosure. Self-report inventories by their very nature, allow dark triad personalities to disguise displeasing characteristics apparent from taking the personality inventory. Therefore, a multi-modal assessment of direct measures of dark triad personalities in relation to trolling may prove beneficial. For example, a replication of this research could ask close friends and family members to answer the same dark triad scale with the participant's permission and informant reporting could identify correlations for a better understanding of actual dark triad behaviours. (Muris et al., 2017) reported this method has proved useful in the past using the same methodologies to counter-act false reporting via personality inventories.

Understanding the implications and destructive power of those on SNS within the dark triad is imperative in facilitating ethical and responsible practices with others online. Safe and accountable computer-mediated interaction via SNS may give power back to victims of trolling who need it most. In an online economy, it is imperative we examine the psychological mechanisms which underpin the credible threat to others online, via understanding the motivations which lie beneath the mask of online trolls.

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Tables**Table 1.***Descriptive Statistics Summary of the Composite Scores*

Descriptive Statistics	Machiavellianism	Narcissism	Psychopathy	Trolling Experience
N	131	131	131	131
Mean	2.86	2.86	2.35	1.4981
Median	2.78	2.89	2.22	1.2500
Mode	3.44	2.89	2	1.00
Std. Deviation	0.63	0.38	0.51	.71622
Variance	0.40	0.14	0.26	.513

Note: The Table above represents the descriptive statistics for each of the variables. Including the Short Dark Triad Scale (SD3) and Global Assessment of Internet Trolling Scale.

Table 2.*Percentage by Gender of Frequency of Internet Usage*

Gender	Frequency	Percent
Male	57	43.5
Female	74	56.5
Total	131	100.0

Table 3.*Frequency of Internet Usage*

Internet Usage	Frequency	Percent
One a day or less	2	1.5
2-4 times per day	24	18.3
Every hour	44	33.6
All day long	61	46.6
Total	131	100.0

Table 4.*Reliability using Cronbach Alpha for internal consistency of Personality Subscales.*

Variables	Subscale Items	α^*
Full Survey	32 Items	0.82
Narcissism	9 Items	0.16
Machiavellianism	9 Items	0.76
Psychopathy	9 Items	0.54
Trolling Experience	4 Items	0.82

Note: *Refers to the Alpha score (α) denoting reliability using Cronbach Alpha.

Table 5.*Pearson correlation coefficient with trolling experience*

Variables		TYPE of Correlation	Trolling Experience
Composite	score	Pearson Correlation	.403**
Machiavellianism		Sig. (2-tailed)	.000
		N	131
Composite	score	Pearson Correlation	.231**
Narcissism		Sig. (2-tailed)	.008
		N	131
Composite	score	Pearson Correlation	.539**
Psychopathy		Sig. (2-tailed)	.000
		N	131

Table 6.*ANOVA. Dark Personality Traits on Trolling Scores.*

Model	Sum Squares	of df	Mean Square	F	Sig.
Regression	20.228	3	6.743	18.43212719	.000
Residual	46.459	127	.366		
Total	66.687	130			

Table 7.*Summary of Results and Coefficients of Regression Analysis.*

Composite Scores	Coefficients Beta	T	Sig.
(Constant)		-.312	.755
Machiavellianism	.131	1.350	.179
Narcissism	-.087	-.986	.326
Psychopathy	.502	5.030	.000

Table 8.*Summary of Results and Coefficients of Regression Analysis.*

Variables	Type of Correlation	How often do you use internet?
Composite score Machiavellianism	Pearson Correlation	.186*
	Sig. (2-tailed)	.033
	N	131
Composite score Narcissism	Pearson Correlation	.180*
	Sig. (2-tailed)	.040
	N	131
Composite score Psychopathy	Pearson Correlation	.048
	Sig. (2-tailed)	.586
	N	131

Figures

Bar chart: Percentage by Gender of Frequency of Internet Usage

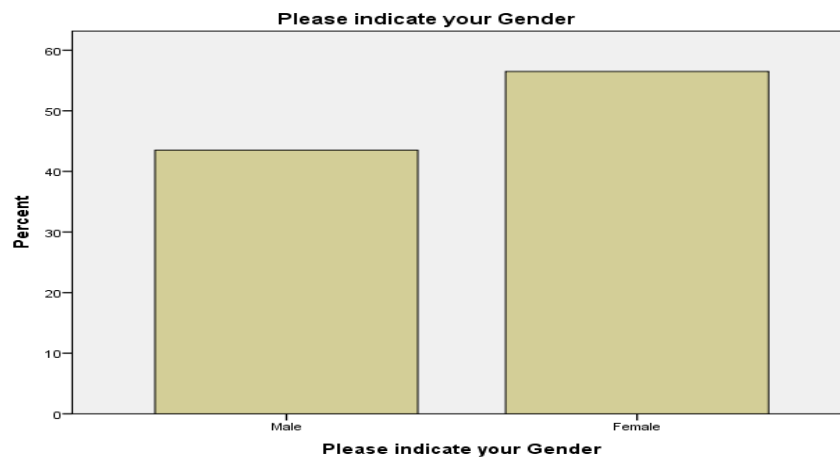


Figure 1. Reports by Gender the frequency of internet usage. Indicating that Females had a higher frequency of internet usage over Males.

Pie Chart: Percentage by Gender of Frequency of Internet Usage

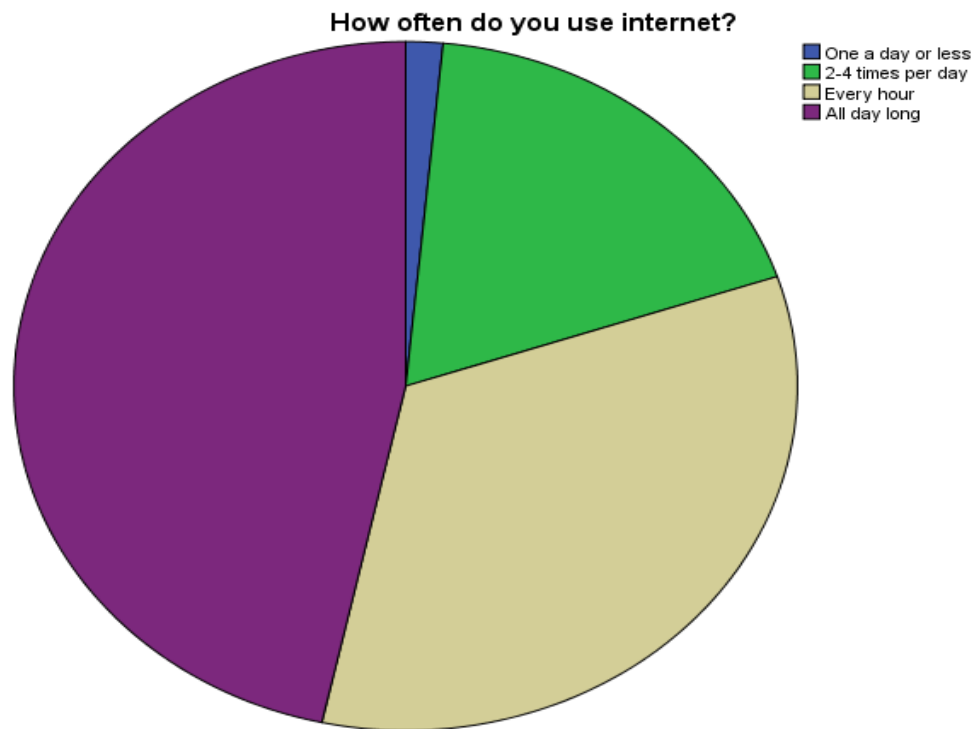


Figure 2: Frequency of Internet Usage from extremely light to heavy.

Appendices

Appendix A

Participant Survey Information Prior to Beginning Survey



Survey Information

Study Title: Unmasking the Mind of the Troll

Purpose of the Research

The purpose of this research is to investigate the darker side of personality characteristics in relation to online trolling behaviours, as these characteristics are becoming more prevalent within trolling and increased internet usage. This research will contribute to the body of research on the dark triad in relation to online trolling behaviours.

Invitation

You are being invited to consider taking part in the research study entitled: ***What Lies Beneath the Mask of Online Trollers.*** This project is being undertaken by Shirleen Lee and is supervised by Catherine Friend at the Institute of Art Design & Technology.

This research is part of a research project for credits towards an M.Sc. Cyberpsychology Degree in the Institute of Art, Design and Technology, Dun Laoghaire, Ireland. Before you decide to take part, it is important to understand why this research is being done and what it will involve. Please take time to read this information carefully and discuss it with friends and relatives if you wish. Please email the researcher if there is anything that is unclear or if you would like more information.

Do I have to take part?

You are free to decide whether you wish to take part or not. If you do decide to take part, you will be asked to check the box prior to beginning the survey to consent

to your voluntary participation. You are free to withdraw from this study at any time and without giving reasons.

If I take part, what do I have to do?

You will be invited to complete a 31-item survey via a hyperlink online by checking boxes regarding to what extent you agree or disagree to questions asked. It will take approximately 10 minutes of your time and all responses are completely anonymous and confidential.

What are the benefits (if any) of taking part?

By participating with your valuable time, you will be contributing to a larger body of research within the Psychology community which assists in further understanding the characteristics of trolling behaviours. Again, all information is anonymous and confidential.

What are the disadvantages and risks (if any) of taking part?

Some of the questions may seem sensitive when understanding general motivations of personality characteristics, if you feel uncomfortable answering a question please skip and proceed to the next with no further justification needed. All responses are anonymous.

How will information about me be used?

Your data will be used to contribute to the growing body of research on the dark triad in relation to online trolling behaviours and internet usage. Your data will be anonymous to the researcher as the results arrive as a statistical value and will be statistically analysed. Your information will be kept securely on a password protected cloud account and backed up digitally on a password protected computer device with access only by the researcher and supervisor of this study. It will be deleted five years after publication as per Departmental Ethical guidelines and the Psychological Society of Ireland. The objective of this research is to contribute to the psychological community pending appropriate ethical permission and will be used to satisfy requirements of a thesis as part of the researcher's postgraduate study in a M.Sc. Cyberpsychology Degree.

Who will have access to information about me?

The Ethics board at the Department of Technology and Psychology Ethics Committee as well as the researcher's academic supervisor at the Institute of Art Design & Technology will have access to this data. Your information will be kept securely on a password protected cloud account and backed up digitally on a password protected computer device with access only by the researcher and supervisor of this study. All information will be stored confidentially and deleted five years after publication as per departmental ethical guidelines.

What will happen to the results of the study?

The data provided as a result of your participation will be used to satisfy requirements of a thesis as part of the researcher's postgraduate study in a M.Sc. Cyberpsychology degree. Please note, that no results of the specifics of the outcomes of the study will be given to you due to the sensitive nature of some of the questions asked, also, as results are anonymous, individual results will not be possible.

Who has reviewed the study?

This study has been approved by the Department of Technology and Psychology Ethics Committee (DTPEC)

What if there is a problem?

If you have a concern about any aspect of this study, you may wish to speak to the researchers who will do their best to answer your questions. You should contact Shirleen Lee or the project supervisor Catherine Friend.

Contact for further information


Please email: Shirleen Lee – Email: N00162914@iadt.ie and my supervisor's contact details are as follows: Catherine Friend, Email: catherinefriend09@gmail.com.

Thank you

Date – April 27th 2018

Appendix B

Informed Consent Form Prior to Beginning Survey



Unmasking The Mind of the Troll

* Required

Informed Consent

Dear Participant,

I am conducting valuable research as part of my Postgraduate Degree in the Department of Psychology.

This survey is completely anonymous and takes 6- 10 minutes of your time to complete. It researches the darker side of personality characteristics and contributes to a larger body of research within Cyberpsychology which is a growing area of interest within cyberspace.

If you had time to pass this survey onto one individual, it would make a significant difference in assisting me with my endeavour. Thank you in advance for your time and generosity.

Please note, you must be over 18 years of age to complete this study.

Your participation in this study is voluntary.

You have the right to withdraw from this survey at any stage during or after completion via your anonymous personalised identification number. This number will be the first two initials of your name and the date of participation e.g., C080118.

Please remember this number to withdraw your data should you wish to do so by emailing the researchers.

At which time, all anonymous information will be erased and you will be debriefed again regarding the study.

Please only answer questions you feel comfortable answering otherwise, please skip to the next.

Due to the sensitive nature of this survey, results will not be issued upon completion and will be kept anonymous as statistical data and kept confidentially by the researcher in a password protected folder in accordance with ethical guidelines.

Thank you.

Appendix C

Check Boxes Issuing Informed Consent Prior to Survey

Please tick the boxes below to issue your consent:

1. I confirm that I have read and understand the information relating to my consent to participate and have the opportunity to ask questions.

*

☐ Yes, I give my consent

This is a required question

2. I understand that my participation is voluntary and that I am free to withdraw at any time.

*

☐ Yes, I understand

This is a required question

3. I agree to take part in this study

*

☐ I agree

This is a required question

4. I am over the age of 18 years.

*

☐ Yes

This is a required question

5. I understand that the data collected about me is anonymised and will kept confidential. My signature or personal information is not required for this study.

*

☐ Yes

This is a required question

6. I agree to allow the data about me to be used for future research projects unless I chose to withdraw from participation.

*

☐ Yes

This is a required question

Appendix D

Participant ID Request – to Protect Respondents Anonymity Prior to Survey

Participation ID

Please enter your participation ID.

If you decide to use customised initials to further protect your anonymity please keep a record to recall later.

: Insert below the first two initials of your name and the date of participation:

For example: CA080118 *

Your answer

This is a required question

Thank you. Please proceed to check box survey:

Time: 6-10 minutes to complete.

BACK

NEXT

Page 2 of 5

Never submit passwords through Google Forms.

Appendix E

31-Item Survey on a Likert Scale for Respondents

Section 4 of 5

Section title (optional)

The test consists of thirty-one statements that must be rated on how much you agree with them. The test should not take most people more than six minutes.

Question	Strongly disagree	Disagree	Neutral (Neither ...	Agree	Strongly Agree
It's not wise to tell...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People see me as...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like to get reven...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like to use clever...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I hate being the c...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I avoid dangerous...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Whatever it takes,...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Many group activi...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Payback needs to...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avoid direct confli...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know that I am s...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People often say I...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It's wise to keep tr...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like to get acqu...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It's true that I can ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You should wait f...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel embarrasse...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People who mess...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are things y...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have been comp...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have never gotte...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Make sure your pl...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am an average p...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy having sex...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most people can ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I insist on getting ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'll say anything to...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have sent peopl...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like to troll peopl...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy grieving ot...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The more beautif...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

After section 4
Continue to next section

Appendix F


Debrief Post Survey

Section 5 of 5

Debrief Post Survey

Description (optional)

Image title



Title

Thank you very much for taking part in this research study.

The study in which you just participated was designed to investigate the darker side of personality characteristics in relation to online trolling behaviours, as these characteristics are becoming more prevalent within trolling and increased internet usage. This research will contribute to the body of research on the dark triad of personality characteristics within online trolling.

If you have questions about this study or you wish to have your data removed at any time from the study, please contact me at the following e-mail address: N00162914@iadt.ie and quote your Participant ID.

Alternatively, you may contact my supervisor, Catherine Friend at catherinefriend09@gmail.com.

Please note, the researcher is unqualified to provide emotional support, please refer to the agencies below for mental health assistance.

We thank you sincerely for contributing and assure you that your data is confidential and anonymous, and if published the data will not be in any way identifiable as yours.

Due to the sensitive nature of this survey, results will not be issued upon submission and will kept anonymous as statistical data. Your anonymous information will be kept confidential on file in a password encrypted folder for up to 5 years by the researcher in accordance with ethical guidelines.

Who Do I contact for Emotional Support?

If you have been affected by the content of this study in any way, please see below a list of resources that are available to support you with your mental health.

Samaritans:
Please call the Samaritans' 24-hour helpline who offer a free confidential listening service who are always there to listen to you. Alternatively, please refer to the website to locate your local branch.
Telephone: 116 123
Website: www.samaritans.org

Pieta House
Alternatively, Pieta House offer a free, therapeutic approach for people who are in suicidal or emotional distress. All Pieta House therapists are psychotherapists or psychologists whose qualifications are recognised by the Irish Association of Humanistic and Integrative Psychotherapy (IAHIP), the Irish Association for Counselling and Psychotherapy (IACP) or the Psychological Society of Ireland (PSI).
Telephone: 1800 247 247 or text Help to 51444.

ReachOut
ReachOut specialise in offering support for those affected by mental health and technology abuse or if you have been a victim of cyber bullying online.
Website: <https://ie.reachout.com>

National Anti-Bullying Centre: is an internationally recognized centre of excellence in bullying research, offering valuable resources to those who have been affected by bullying including cyber-bullying and trolling.
Website: <https://www4.dcu.ie/abc/contact.shtml>

Thank you for your valuable feedback.

Appendix G

Short Dark Triad of Personality (D3-Short) – Personality Instrument

Short Dark Triad - (D3 -Short)

Instrument Title: Dark Triad of Personality (D3-Short)

Instrument Author: Paulhus, D. L

Instrument owner: Paulhus, D. L. (2013) . Dark Triad of Personality (D3-Short) . Measurement Instrument Database for the Social Science. Retrieved from www.midss.ie

Please rate your agreement or disagreement with each item using the following guidelines.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree

Give screenshots of how this would look in your online form

Machiavellianism subscale

- 1. It's not wise to tell your secrets.*
- 2. Generally speaking, people won't work hard unless they have to.*
- 3. Whatever it takes, you must get the important people on your side.*

4. *Avoid direct conflict with others because they may be useful in the future.*
5. *It's wise to keep track of information that you can use against people later.*
6. *You should wait for the right time to get back at people.*
7. *There are things you should hide from other people because they don't need to know.*
8. *Make sure your plans benefit you, not others.*
9. *Most people can be manipulated.*

Narcissism subscale

1. *People see me as a natural leader.*
2. *I hate being the center of attention. (R)*
3. *Many group activities tend to be dull without me.*
4. *I know that I am special because everyone keeps telling me so.*
5. *I like to get acquainted with important people.*
6. *I feel embarrassed if someone compliments me. (R)*
7. *I have been compared to famous people.*
8. *I am an average person. (R)*
9. *I insist on getting the respect I deserve.*

Psychopathy subscale

1. *I like to get revenge on authorities.*
2. *I avoid dangerous situations. (R)*
3. *Payback needs to be quick and nasty.*
4. *People often say I'm out of control.*

5. *It's true that I can be mean to others. (or I enjoy having sex with people I hardly know.)*

6. *People who mess with me always regret it.*

7. *I have never gotten into trouble with the law. (R)*

8. *I like to pick on losers.*

9. *I'll say anything to get what I want.*

Reference:

Jones, D. N., & Paulhus, D. L. (2013). Introducing the Short Dark Triad (SD3): A brief measure of dark personality traits.

Appendix H

Global Assessment of Internet Trolling Scale (Interspersed).

Global Assessment of Internet Trolling

Below are the four items relevant to trolling that was interspersed with the other measures.

- 1. I have sent people to shock websites for the lulz*
- 2. I like to troll people in forums or the comment sections of websites*
- 3. I enjoy grieving other players in multiplayer games*
- 4. The more beautiful and pure a thing is, the more satisfying it is to corrupt.*

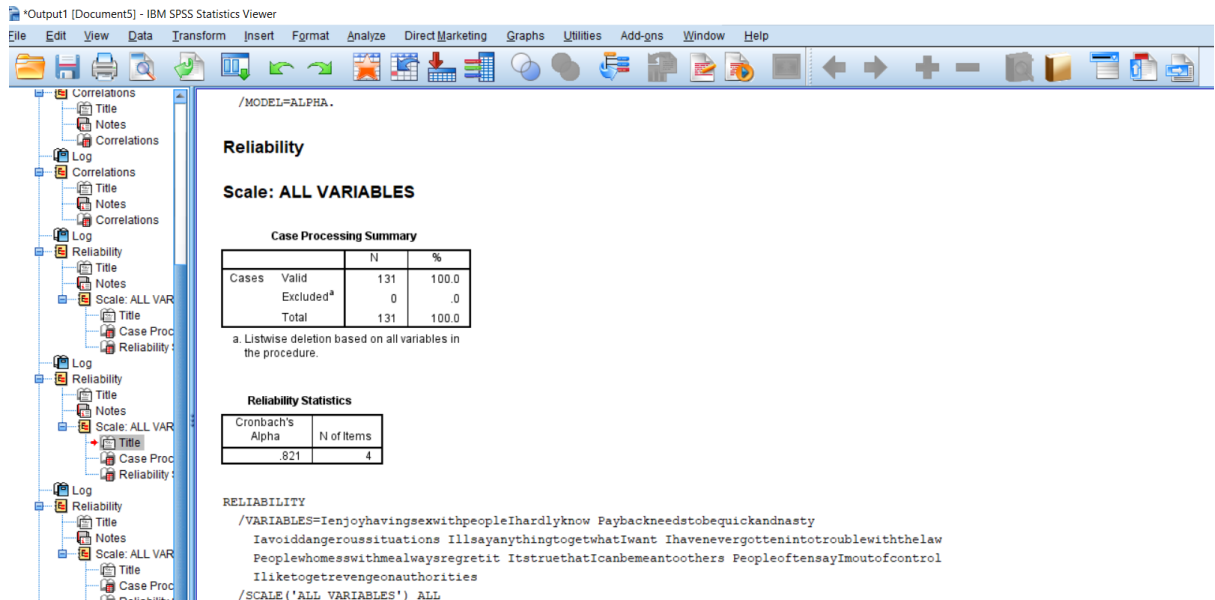
Rated on 5-point scales from 1 (strongly disagree) to 5 (strongly agree). The first three items addressed trolling experience and enjoying various forms of trolling, while the last item addressed identification with trolling and Internet subcultures.

Reference:

Buckels, E. E., Trapnell, P. D., & Paulhus, D. L. (2014). Trolls just want to have fun. *Personality and individual Differences*, 67, 97-102.

Appendix I

SPSS Cronbach Alpha Output



Reference:

IBM Corp. Released. (2015). IBM SPSS Statistics for Windows, Version 23.0. 2015.

Appendix J

SPSS Cronbach Alpha for Narcissism

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	131	100.0
	Excluded ^a	0	.0
	Total	131	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.163	9

RELIABILITY

```

/VARIABLES=Peopleseemeasanaturalleader Ihatebeingthecenterofattention
Manygroupactivitiesendtobedullwithoutme Iliketogetacquaintedwithimportantpeople
Iffeelbarrasedifsomeonecomplimentsme Ihavebeencomparedtofamouspeople Iamanaverageperson
IinsistongettingtherespectIdeserve IknowthatIamspecialbecauseeveryonekeepstellingmeso
/SCALE('ALL VARIABLES') ALL
/MODEL=ALPHA.
  
```

RELIABILITY

```

/VARIABLES=Itisnotwisetotellyoursecrets Whateverittakesyoumustgettheimportantpeopleonyourside
Avoiddirectconflictwithothersbecausetheymaybeusefulinthefuture
Youshouldwaitfortherighttimetogetbackatpeople
Therearethingsyoushouldhidefromotherpeoplebecausetheydon'tneedtok
  
```

Reference:

IBM Corp. Released. (2015). IBM SPSS Statistics for Windows, Version 23.0. 2015.

Appendix K

SPSS Cronbach Alpha for Machiavellianism

IBM SPSS Statistics Viewer

File Edit View Data Transform Insert Format Analyze Direct Marketing Graphs Utilities Add-ons Window Help

Correlations
Title
Notes
Correlations
Log
Correlations
Title
Notes
Correlations
Log
Reliability
Title
Notes
Scale: ALL VAR
Case Proc
Reliability
Log
Reliability
Title
Notes
Scale: ALL VAR
Case Proc
Reliability
Log
Reliability
Title
Notes
Scale: ALL VAR
Case Proc
Reliability
Log
Reliability
Title
Notes
Scale: ALL VAR
Case Proc
Reliability

Cronbach's Alpha	N of Items
.163	9

RELIABILITY

```

/VARIABLES=Itisnotwisetotellyoursecrets Whateverittakesyoumustgettheimportantpeopleonyourside
Avoiddirectconflictwithothersbecausetheymaybeusefulinthefuture
Youshouldwaitfortherighttimetogethackatpeople
Therearethingsyoushouldhidefromotherpeoplebecausetheydontneedtok
Makesureyourplansbenefityounotothers Mostpeoplecanbemanipulated
Iliketouseclevermanipulationtogetmyway
Itswisetokeeptrackofinformationthatyoucanuseagainstpeoplelater
/SCALE('ALL VARIABLES') ALL
/MODEL=ALPHA.

```

Reliability

Scale: ALL VARIABLES

Case Processing Summary

	N	%
Cases Valid	131	100.0
Excluded ^a	0	.0
Total	131	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.765	9

Reference:

IBM Corp. Released. (2015). IBM SPSS Statistics for Windows, Version 23.0. 2015.

Appendix L

SPSS Cronbach Alpha for Psychopathy

RELIABILITY

```

/VARIABLES=IenjoyhavingsexwithpeopleIhardlyknow Paybackneedstobequickandnasty
Iavoiddangeroussituations IllsayanythingtogetwhatIwant Ihavenevergottenintotroublewiththelaw
Peoplewhomesswithmealwaysregretit ItstruethatIcanbemeantootothers PeopleoftensayImoutofcontrol
Iliketoretvengeonauthorities
/SCALE('ALL VARIABLES') ALL
/MODEL=ALPHA.

```

Reliability

Double-click to activate

→ **Scale: ALL VARIABLES**

Case Processing Summary

		N	%
Cases	Valid	131	100.0
	Excluded ^a	0	.0
	Total	131	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.544	9

RELIABILITY

```

/VARIABLES=Peopleseemeasanaturalleader Ihatebeingthecenterofattention

```

Reference:

IBM Corp. Released. (2015). IBM SPSS Statistics for Windows, Version 23.0. 2015.

Appendix M

SPSS Cronbach Alpha for Complete 31-Item Survey

Cronbach all.spv [Document2] - IBM SPSS Statistics Viewer

File Edit View Data Transform Insert Format Analyze Direct Marketing Graphs Utilities Add-ons Window Help

Output Log Reliability Title Notes Scale: ALL VARIABLES Case Processing Summary Reliability Statistics Inter-Item Correlation Summary Item ANOVA

```

Ihaventevergottenintotroublewiththelaw IllsayanythingtogetwhatIwant Iavoiddangeroussituations
Paybackneedstobequickandnasty IenjoyhavingsexwithpeopleIhardlyknow
Ihavesentpeopletoshockwebsitesforhelulz Iliketotrollpeopleinforumsorthecommentsectionsofwebsites
Ienjoygrievingotherplayersinmultiplayergames
Themorebeautifulandpureathingisthemoresatisfyingitistocorrupt

/SCALE('ALL VARIABLES') ALL
/MODEL=ALPHA
/STATISTICS=CORR ANOVA
/SUMMARY=MEANS VARIANCE.

```

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	131	100.0
	Excluded ^a	0	.0
	Total	131	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

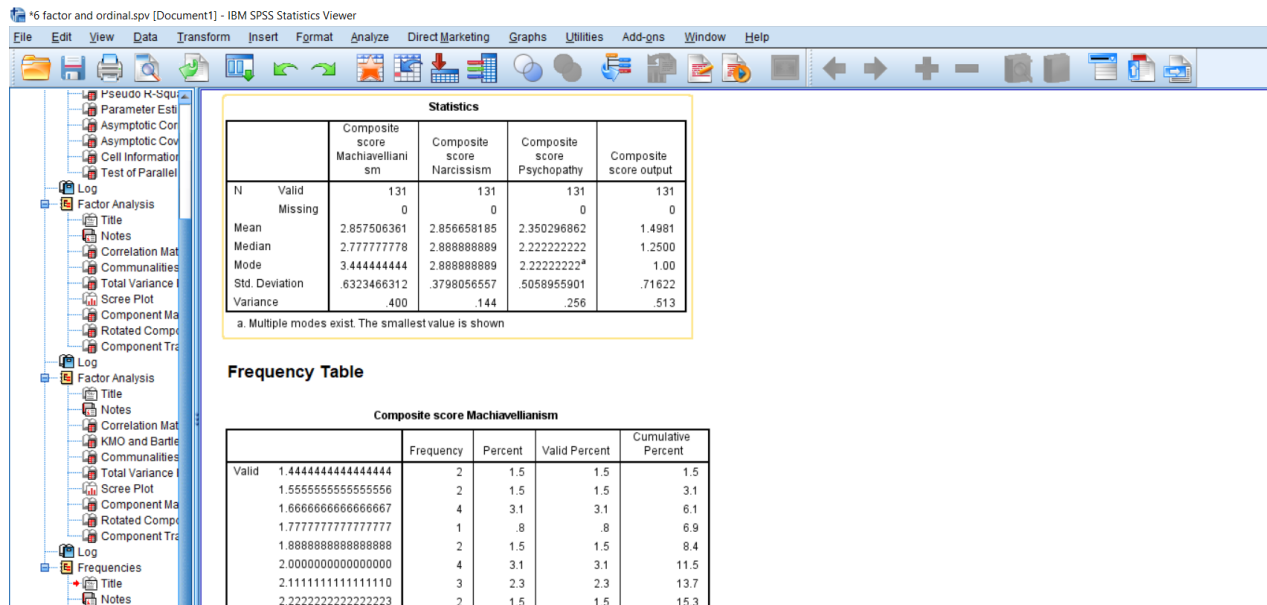
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.827	.836	31

Reference:

IBM Corp. Released. (2015). IBM SPSS Statistics for Windows, Version 23.0. 2015.

Appendix N

SPSS Descriptive Composite Scores



Reference:

IBM Corp. Released. (2015). IBM SPSS Statistics for Windows, Version 23.0. 2015.

Appendix O

SPSS Hypotheses One

*6 factor and ordinal.spv [Document1] - IBM SPSS Statistics Viewer

File Edit View Data Transform Insert Format Analyze Direct Marketing Graphs Utilities Add-ons Window Help

Log
Factor Analysis
Title
Notes
Correlation Mat
Communalities
Total Variance
Scree Plot
Component Ma
Rotated Comp
Component Tra

Log
Factor Analysis
Title
Notes
Correlation Mat
KMO and Bartle
Communalities
Total Variance
Scree Plot
Component Ma
Rotated Comp
Component Tra

Log
Frequencies
Title
Notes
Active Dataset
Statistics
Frequency Tabl
Title
Composite
Composite
Composite
Composite

Log
Correlations
Title

Sum of Squares	3.25	3	2.3	2.3	98.5
Mean Square	4.25	1	.8	.8	99.2
Total	5.00	1	.8	.8	100.0
Total		131	100.0	100.0	

```

CORRELATIONS
/VARIABLES=CompositescoreMachiavellianism CompositescoreNarcissism CompositescorePsychopathy
Compositescoreoutput
/PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE.
  
```

→ **Correlations**

		Composite score Machiavellianism	Composite score Narcissism	Composite score Psychopathy	Composite score output
Composite score Machiavellianism	Pearson Correlation	1	.468**	.622**	.403**
	Sig. (2-tailed)		.000	.000	.000
	N	131	131	131	131
Composite score Narcissism	Pearson Correlation	.468**	1	.511**	.231**
	Sig. (2-tailed)	.000		.000	.008
	N	131	131	131	131
Composite score Psychopathy	Pearson Correlation	.622**	.511**	1	.539**
	Sig. (2-tailed)	.000	.000		.000
	N	131	131	131	131
Composite score output	Pearson Correlation	.403**	.231**	.539**	1
	Sig. (2-tailed)	.000	.008	.000	
	N	131	131	131	131

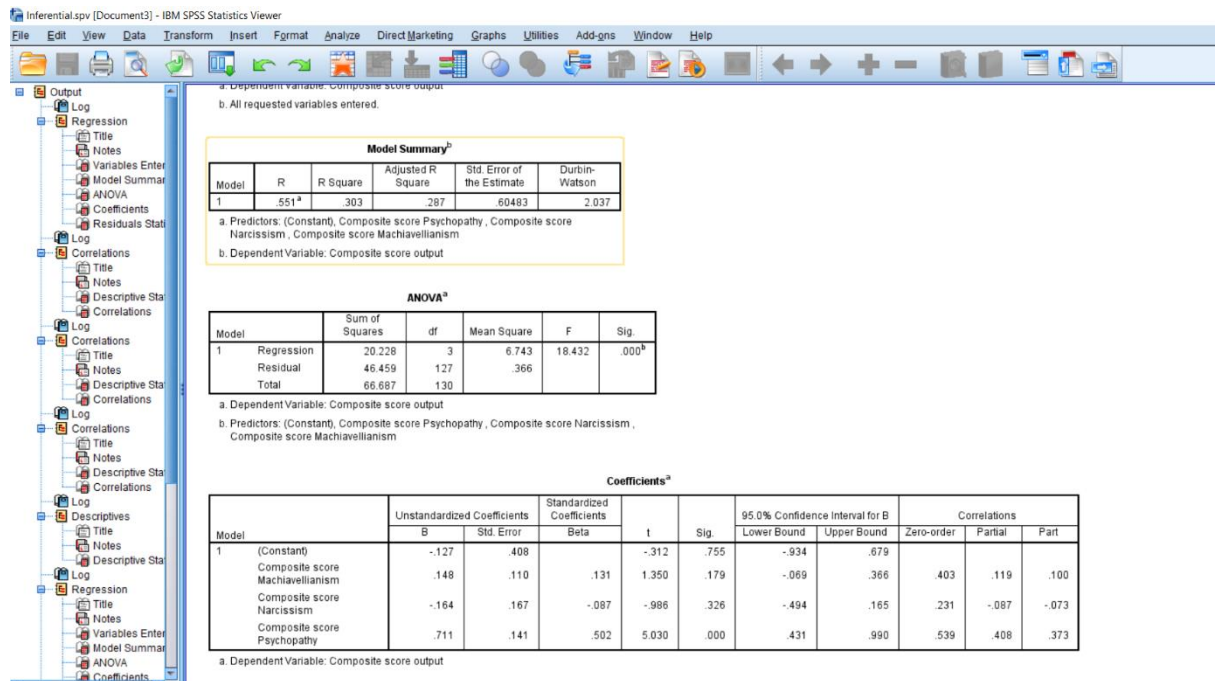
** . Correlation is significant at the 0.01 level (2-tailed).

Reference:

IBM Corp. Released. (2015). IBM SPSS Statistics for Windows, Version 23.0. 2015.

Appendix P

SPSS Hypotheses Two

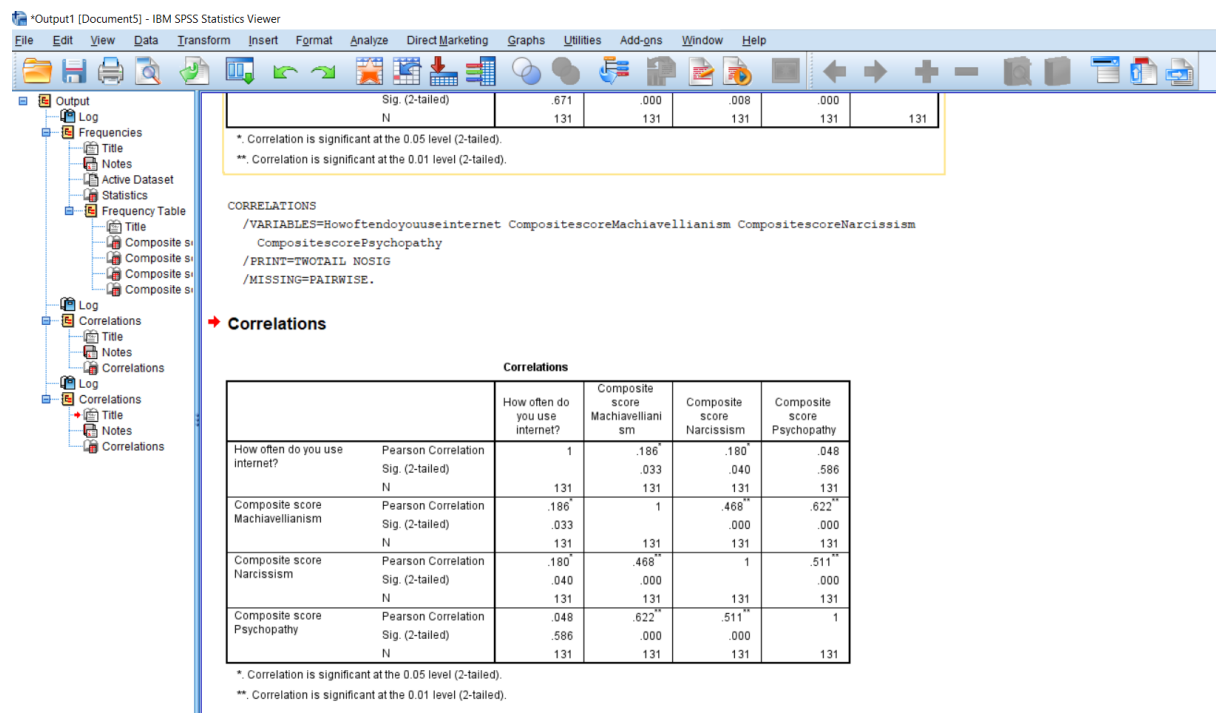


Reference:

IBM Corp. Released. (2015). IBM SPSS Statistics for Windows, Version 23.0. 2015.

Appendix Q

SPSS Hypothesis Three



Reference:

IBM Corp. Released. (2015). IBM SPSS Statistics for Windows, Version 23.0. 2015.