

ONLINE TROLLING IN A SAMPLE OF SUB-SAHARAN AFRICAN IN-SCHOOL ADOLESCENTS: FAMILY FUNCTIONING AND PERSONALITY AS FACTORS

Juliet Ifeoma Nwufo, Anne Ukachi Madukwe, & Ebele Evelyn Nnadozie
Department of Psychology
University of Nigeria, Nsukka

*Correspondence: nwufo.ifeoma@unn.edu.ng

ORCID ID: 0000-003-3314-5014

ABSTRACT:

Trolling as psychological bullying with many negative consequences is recently a growing problem among adolescents in both developed and developing countries like Nigeria. Therefore, this study examined the role of family functioning and personality as factors in online trolling behavior among in-school adolescents in Nsukka Urban. Participants for the study were 500 (males = 213, 42.6%); (females = 287, 57.4%) adolescent students drawn from three co-educational secondary schools in Nsukka urban. Participants were selected using stratified sampling techniques. Their age ranges from 14-20 (Mean= 16, Standard Deviation = 2.19). Three instruments that were employed for data collection includes: Global Assessment for Internet Trolling (GAIT), Big-Five Inventory (BFI) and Family APGAR Index. The study design was a cross-sectional survey design. Hierarchical multiple regression was employed for data analysis. Results revealed that family functioning negatively predicted trolling ($\beta = -.65, P < .001$), personality traits such as conscientiousness, neuroticism, and openness to experience negatively predicted trolling ($\beta = -.15, P < .01$) respectively, while agreeableness positively predicted trolling ($\beta = .21, P < .01$). The implication of the findings of this study is that adolescent students should be educated on the negative effects of trolling as it affects the psychological well-being of the person being trolled and therefore trolling behavior should be discouraged.

Key words: Adolescents, Family functioning, Personality, and Trolling.

INTRODUCTION

Online trolling as a psychological bullying has been recognized as a global problem in many developed (Bishop, 2014; Wu et al., 2022); and developing countries like Nigeria (Aleke, 2021; Denwigwe et al 2019). Adolescence as a developmental stage is so sensitive that it involves both physical and psychological changes as it is accompanied by changes in behavior, expectation and relationships with both parents and peers (Collins et al., 1997). It is a stage in life that is marked with constant tension between developing competencies, achieving milestones, independence seeking, seeking to make or create space between people and adjusting to different environments (Schultze-Krumbholz et al., 2018). Thus experts have shown that trolling behaviour is common at this stage because the idea of exploring the world is at its peak during this period (Cruz et al., 2018).

Hinduja and Patchin (2014) sees online trolling as a type of psychological bullying by means of such electronic devices as mobile phones, blogs, websites and chat rooms. Although trolling is a relatively new concept and the definition is still evolving (Li et al., 2022), most researchers agree that trolling is the use of electronic communication technologies to bully others (Kowalski et al., 2014). It is a deliberate act of using insults or bad language on online platforms and social networking sites to bring about a response from its targets (Denwigwe et al., 2019). In the words of Lumsden and Morgan (2017), online trolling involves sending or submission of provocative emails, social media posts, or tweets (tweeter message) with the intention of inciting an angry or upsetting response from its intended target or victim. Trolls usually spend their time looking for vulnerable people to make angry while making themselves feel good. This kind of behavior (trolling) involves posting off-topic material, inflammatory or confusing messages. In literature, there is no clear definition of trolling, but is just a general term used to describe many online activities.

As regards perpetrators, studies (e.g, Okoye et al., 2015; Akpan, 2016) point to a variety of reasons such as: seeking revenge as the most perpetrators who engage in trolling and many cyber bullies were themselves victims of bullying and/or trolling at some point. Some perpetrators troll others as a joke, and others employ it to target their offenders. It is easier to engage in trolling online because the fear of getting caught is lower than in traditional bullying. Thus there is usually a perception of anonymity common with the perpetrators of this act. Some engage in it because they felt angry about something; while others use it as a silencing tool to discourage other internet users from getting involved with additional online discussion.

Some of the negative impacts of online trolling are, it usually evoke negative emotions such as fear, distress, concern, or helplessness (Owen et al., 2017; Al-Rahmi et al., 2019), in addition, a troll can disrupt the discussion on a news group, disseminate bad advice, and damage the feeling of trust in the group. Bishop (2014) noted that being branded a troll is quite damaging to one's online reputation.

Estimates of prevalence identified within the literature vary widely, according to the definition of trolling used and the population studied (including factors such as age, gender, physical location and social group). Prevalence is also measured according to different metrics (number of perpetrators, number of victims and level of activity), which can make it hard to draw meaningful comparisons between studies. The literature demonstrates a clearer focus on cyber-bullying (possibly because this is a better-defined term and therefore easier to measure), with limited attempts to quantify the prevalence of online trolling specifically (Fancourt et al., 2020). For instance, a current systematic review by Zhu et al (2021) on cyber-bullying among adolescents and children revealed that the prevalence rates of cyber-bullying preparation ranged from 6.0 to 46.3%, while the rates of cyberbullying victimization ranged from 13.99 to 57.5%, based on 63 references. Similarly, Berry and Bainbridge (2017) found 20-34% of participants had experienced cyber stalking. More recently, Acquadro Maran (2019) found 46% of their participants as victims of cyber stalking. In the same way, Dekeserdy et al (2019) reported 35% of participants had been victims of technology-enabled stalking. Contrarily, Fansher and Randa (2019) asserted that only 10% of participants had been stalked by a person they initially met through social media. In Africa e.g, Ghana, Ansong et al (2013) opined that the practice of unlawful act, like trolling is commonplace, especially with the advent of the newer and more interactive online social media suits such as Facebook, Twitter, Whatsapp, Instangram and the like. These platforms allow for the formation of groups and chat features- a fertile ground for trollers to breed and work. In Nigeria, Denwigwe et al (2019), noted that online trolling is a common practice among in-school adolescents, and that anybody can be a victim. The aforementioned studies suggest a consensus on the prevalence of online trolling, but a disparity on the specific name used to study it. One of the reasons may be methodological differences (Reyns, 2019), lack of awareness about the characteristics of online trolling (Smoker & March, 2017) etc. This calls for further investigation into the multi-faceted and complex nature of online trolling (Fissel, 2019; Reyns, 2019). Therefore, in the present study, the researchers considered both the contextual (family functioning), and personal (personality) factors as possible risk factors.

Family functioning is basically seen as a family's ability to interact, communicate, make decisions, solve problems and maintain relationships with each other (Epstein et al.,1978). Nuttall et al (2012) adds that "good family functioning is linked to a wide variety of positive outcomes, such as mental and emotional well-being, adjustment and social competency; and decreased problem behaviours such as substance abuse, delinquency and sexual activity. In addition, the development of good online manner appears to be related to high quality parent-adolescent relationship (Nuttall, 2012). The family relationship has been found to be one of the most influential factors on online trolling (Ahmadi & Saghafi, 2013), and family dissatisfaction is also associated with Internet activities among adolescents (Li et al., 2014). Hence adolescents from families with good family functioning have a sense of belonging, they are



valued and are given opportunities to contribute to society which to a large extent are made possible within the various social environments where adolescents live, such as family, school and community (Jose et al., 2012). Empirical evidence (e.g, Pineda et al., 2023; Saulnier, & Krettenauer, 2023) has shown that low family functioning predicted online addiction. This supports the notion that low family functioning results in risk of online trolling among adolescents, and therefore deserved further investigation.

Another variable that is of interest in the present study is adolescents' personality. This is defined as a unique, composite of inborn and acquired mental abilities, temperaments, attitudes and other individual differences in thoughts, feelings and actions (Carducci, 2009). These individual characteristics are considered stable over time, consistent and predictable. The measurements of personality include affective characteristics such as emotion and temperament, cognitive variables such as intelligence and achievement as well as psychomotor skills (Aiken, 2014). The five factors Goldberg identified as primary factors of personality are: openness to experiences, conscientiousness, extroversion, agreeableness, and neuroticism. This model is called the "Big five" and lumped thousands of personalities within its framework, across multiple continents and cultures and with a wide variety of populations. These five factors do not provide completely exhaustive explanations of personality, but they are known as the "Big five" because they encompass a large portion of personality-related terms. The five factors are not necessarily traits in and of themselves but factors in which many related traits and characteristics fit (John & Srivastava, 1999). These five dimensions are what the present study examined.

Openness to experience has been described as the depth and complexity of an individual's mental life and experiences (John & Srivastava, 1999). It is also sometimes called intellect or imagination. Openness to experience concerns an individual's willingness to try new things, to be vulnerable and the ability to think widely (Laconi et al., 2017). According to some scholars (e.g, Costa, & McCrae, 1992; Johnson & Ostendorf, 1993), open individuals are curious, independent, untraditional, original, brave, highly imaginative, open-minded, intellectual and creative and they like novelty, have brave perspectives and enjoy differences. An individual who is high in openness to experience is likely someone who has a love of learning, enjoys the arts, and engages in a creative career or hobby. Somebody who is low in openness to experience probably prefers routine over variety, sticks to what they know, and prefers less abstract arts and entertainment. Researchers (e.g, Zezulka et al., 2016; Gylfason et al., 2021) have reported a positive relationship with online trolling. This implies that this trait (openness to experience) may be related to online trolling because adolescents who are low in openness to experience may not be attracted with the new technologies talk more of being addicted to the internet and surfing the internet looking for whom to troll, while those who score highly in it capitalize on the advantage and explore the world, their selves, and their passions, and may be perpetrators of the act.

Conscientiousness is a trait that can be described as the tendency to control impulses and act in socially acceptable ways, or behaviours that facilitate goal-directed behaviour (John, et al., 1999). Conscientious people excel in their ability to delay gratification, work within the rules, and plan and organize effectively. In the words of Costa and McCrae et al (1992) conscientiousness means being decisive, organized, disciplined, cautious, abiding by principles and rules, and working hard; and often well-prepared to tackle any obstacles that come their way (Woods et al, 2016). In other words, non-conscientious people have characteristics such as crippling harassment and lack of commitment to ethics. These people usually do not pay enough attention to their responsibilities and duties, and they are not determined in reaching their goals. Thus, it is natural that such people are more likely to get addicted to the internet, because if the person does not have the necessary control, the internet can easily attract him/her. That means, it can be stated that in comparison to individuals with



high levels of conscientiousness, individuals with low level of conscientiousness may be more involved in trolling.

Extraversion as a personality trait has two familiar ends of the spectrum: extraversion and introversion. It is defined as individuals' amount and intensity of social interaction and represents that individuals can act with self-confidence and competition (McCrae & John, 1992). In general, extraverts draw energy or "recharge" from interacting with others, while introverts get tired from interacting with others and replenish their energy from solitude (Widiger & Costa, 2012). This trait called extraversion predicts a variety of positive social behaviors (Eaton & Funder, 2003) and extroverts report increased levels of social support and larger social networks (Swickert, et al., 2002). On the other hand, the introverts are likely to be involved in trolling since they like solitude, they may shy away from interacting with others physically, and instead they prefer interaction in the virtual world (Nopiana et al., 2022). High scores on this trait (extroversion) is characterized by warmth, gregariousness, assertiveness, activity, excitement seeking and positive emotions, whereas low scorers on this scale exhibit social isolation, interpersonal detachment, lack the support of networks; have flattened affect, lack of joy, and vest for life, reluctance to assert self or assume leadership role, even when qualified, social inhibition and shyness are common among them.

Agreeableness concerns how well people get along with others. While extraversion concerns sources of energy and pursuit of interaction with others, agreeableness concerns one's orientation to others. It is a construct that rests on how one generally interacts with others. Agreeableness denotes trust, straight forwardness, altruism, compliance, modesty, and tender-mindedness. Agreeable individuals do not like competition and they do not easily get into conflict. They are tolerant and highly forgiving; do not like using force and avoid putting pressure (McCrae, et al., 1992). Those who score low on agreeableness show cynicism and paranoid thinking, inability to trust friends or family, quarrelsome, ready to pick fights, expletive and manipulative, lying, rude and inconsiderate manner, alienate friends, limit social supports, lack respect for social conventions which can lead to trouble with laws, inflated and grandiose sense of self, and arrogance. In other words, it is assumed that individuals with low levels of agreeableness have more tendency to unhealthy internet use and therefore are likely to troll online.

Individuals' long-term tendency to be in a negative or anxious emotional state is regarded as a personality trait called neuroticism (McCrae, et al., 1992). Neuroticism encompasses one's emotional stability and general temper. Neurotic high scorers exhibit anxiety, anger, hostility, depression, self-consciousness, impulsiveness and vulnerability (Lynam, & Miller, 2015). According to Lynam and Miller, those with low scores on neuroticism scale have the following characteristics: lack of appropriate concerns for potential dangers in health or social adjustment; exhibition of emotional blindness. These individuals often experience negative feelings and try to cope with stressful situations by means of maladaptive coping strategies such as delay and denial (Metzger et al., 2017). It is likely that these individuals may use the internet as a maladaptive way of coping with the daily hassles.

In addition to the above explanation of the five-personality dimension, Gylfason et al (2021) discovered that these personality traits relate to antisocial behaviour, as lower conscientiousness, lower agreeableness and greater extraversion are connected with online trolling.

Based on literature search, the present researchers noted that online trolling is a new concept and even the definitions are still evolving, and that there is a dearth of research in this area especially in developing nations like Nigeria. Therefore, just as has been recommended by some scholars, more research is needed in this area. This will help to understand the concept better and build effective interventions that will help to reduce trolling to its barest minimum and also help to treat and manage the already affected adolescents. The purpose of the study was to examine the predictive role of family functioning and personality (openness,

conscientiousness, extraversion, agreeableness and neuroticism) on online trolling among school going adolescents. Previous scholars (e.g, Craker et al., 2016; Gylfason et al., 2021) noted that personality can help to explain trolling. Our intention was to expand the existing literature by integrating both the contextual (family functioning) and personal (personality) factors in understanding it. To the best of the researchers' knowledge, no study has done this especially in Nigeria.

LITERATURE REVIEW

Due to the novelty of the online trolling, only few empirical works can be found in the literature especially in developing nations like Nigeria.

Family functioning and Online Trolling

The theoretical framework of the present study is social learning theory (Bandura, 1973). The tenet of the theory is that learning is a cognitive process that takes place in a social context and can occur purely through observation or direct instruction, even in the absence of motor reproduction or direct reinforcement. Thus, human learning is a continuous reciprocal interaction of cognitive, behavioural, and environmental factors sometimes called observational learning. Social learning theory focuses on behaviour modeling in which the child observes and then imitates the behaviour of adult or other children around him or her (Devi et., 2017). Drawing from Bandura's analogy, we can see that trolling is as a result of what adolescents observed and learnt from the adult and that they are just victim of wrong orientation which if they are re-orientated rightly will fit into the society well (Devi et., 2017). Adolescents with some kind of personality trait like openness to experience (having interest in exploring and learning new things), and some of them who grew up in a family where violence and trolling are seen as the normal way of life are likely to grow up and repeat the same behaviour. Thus, adolescent trolling behaviour could be influenced by observation and imitation as they do what they see other people do such as engaging in online interaction and also adopt the standard of behavior and emotional characteristics of people whom they admire and wants to be. Özaslan et al (2022) opined that the development of good online manner appears to be related to high quality parent-adolescent relationship; and that the digital preferences and media-infused experiences also affect how families relate to each other inside and outside the home (Johnson & Francis, 2022). Empirical evidence in the literature e.g, Doyle and Markiewicz's (2005) reported in their study with 175 adolescents (young adults) that parenting does affect adolescent's online deviant behaviour. The study made use of self-reports. Greater levels of psychological control were found to increase adolescent's ability to behave responsibly online and follow set standards in Social Networking sites. Further, parental warmth was found to increase adolescent's social competence and esteem while also foreshadowing a decrease in adolescence's online deviant behaviour such as trolling and cyberbullying. A similar study by Flouri and Buchanah (2003) revealed that parental involvement notably affected adolescent's levels of psychological well-being based on their study of 2,722 British adolescents whose age ranged from 14 to 20. More specifically, they reported that proper family functioning was positively related to good social competence online, while being negatively related to trolling behaviour. In line with Amato (1994), in his study reported that the degree of attachment possessed independently in both father-child and mother-child relationships were positively related to the grown children's internet and social behaviours. The national study of 471 adolescent's participants discovered that closeness of mother and father (parents) correlates positively with offspring happiness and life satisfaction while also significantly contributing to increased decreases in anti-social and deviant internet behaviours.

In the same vein, Denwigwe et al (2019) in their study on cyber-trolling and social adjustment among school going adolescents in Calabar, Cross River State, Nigeria, reported

that cyber-trolling has negative influence on the social adjustment of adolescent students. A recent systematic review by Zhu et al (2021) on cyberbullying among adolescents and children: a comprehensive review of global situation, risk factors and preventive measures revealed that parent-child relationship is associated with cyberbullying which is an online act.

Personality and Online Trolling

Craker and March (2016) explored “personality traits and social motivations associated with individuals who engage in online trolling, specifically on Facebook. The personality traits (neuroticism) and social reward (negative social potency) were examined for their predictive role on trolling behaviours on Facebook. A sample of 396 participants were employed to complete the Global Assessment of Facebook Trolling (GAFT, Buckels et al., 2014), and The Social Rewards Questionnaire (Buss, 1983). They found that neuroticism can predict Facebook trolling behaviours; however, negative social potency had the strongest predictive utility. In addition, these results show that “individual trolling behaviour may be better explained by negative social reward motivation than negative personality traits. Thus, their study found that individuals who were high on “everyday sadism” (i.e., individuals who are below clinical levels on sadistic behaviour were more likely to troll. In a bid to support their claim, Buckels et al. believed that this was because trolls find trolling to be enjoyable, in the same way that everyday sadists find causing pain enjoyable. This does fit well with the known literature on sadism, which says that sadists engage in hurtful behaviors because they enjoy it (Buckels et al., 2014; Paulhus, 2014). In addition, it is interesting to note that sadists lack emotional empathy (O’Meara et al., 2011).

Openness to experience has also been known to predict violent video gaming enjoyment. In other words, people who score higher on this trait also tend to play violent video games more often. This is interesting to note, as trolls also tend to prefer violent video games such as First Person Shooters (FPS; Thacker, 2012). This reveals another connection between this personality and trolls that would be relatively easy to test. Bowden-Green et al (2020) in a recent systematic study reported in their study that extraversion predicted online trolling. A similar study by Gulfason et al (2021) using online survey with snow ball sample of 139 participants revealed that agreeableness and conscientiousness negatively associated with online trolling. Other researchers (e.g, Sest & March, 2017; Etudo et al, 2019; March et al, 2023) were of the same view. Consistent with the above studies, a recent meta-analytic study of neuroticism and the digital age (Internet activities) revealed that high levels of neuroticism significantly correlated with all measures of problematic Internet activities of which trolling is no exception. In addition, de Carvalho, et al., (2018) meta-analysis, based on four studies, focused on problematic smartphone use and reported that it was associated with neuroticism and impulsivity. These reviews and meta-analyses came to similar conclusions, though with mixed findings.

With respect to general media activities, only one meta-analysis Liu & Campbell, (2017) explored social media-related activities and personality. Based on 33 studies, the authors found that extraversion and openness were the strongest predictors of Social Network Site (SNS) activities (e.g. SNS gaming, SNS interactions, posting photos, number of friends, information seeking, and status update), whereas agreeableness and conscientiousness showed few significant correlations with social media use, and neuroticism correlated only with global social media use. However, from the literature search, it was discovered that research on personality and trolling is still inconclusive because some of the previous scholars reported mixed findings concerning the BFI and online trolling. In line with the reviewed literature, the following hypotheses were tested in the study:

Hypotheses

1. Family functioning will significantly predict online trolling in a sample of sub-Saharan African in-school adolescents.
2. Openness to experience will significantly predict online trolling in a sample of sub-Saharan in-school adolescents.
3. Conscientiousness will not significantly predict online trolling in a sample of sub-Saharan in-school adolescents.
4. Extraversion will significantly predict online trolling in a sample of sub-Saharan African in-school adolescents.
5. Agreeableness will not significantly predict online trolling in a sample of sub-Saharan in-school adolescents.
6. Neuroticism will significantly predict online trolling in a sample of sub-saharan in-school adolescents.

METHOD

Design

The present study adopted a cross-sectional survey design. Cross sectional survey design was adopted because data obtained from it can be used to make inferences about a population of interest (in-school adolescents) at one point in time.

Setting

The settings for this study were three different co-educational secondary schools drawn from Nsukka Urban, all in Enugu state Nigeria. The settings are all located in South-East region of Nigeria.

Participants

A total of 500 (females = 287, 57.4%; and 213 males, 42.6%) in-school adolescents drawn from three co-educational secondary schools within Nsukka urban participated in the study. The participants are comprised of senior secondary school students from SSI-SSII students. The reason for employing only senior secondary school students in this study is because they have more access to the internet than the junior ones. The ages of these participants range from fourteen (14) to twenty years (20) with a mean age of 16 years (SD = 2.95). The participants were selected using stratified sampling techniques and participation was voluntary.

Instruments

The questionnaire consists of some items measuring the demographics of the participants such as age and gender, etc. Online trolling was assessed using Global Assessment of Internet Trolling (GAIT) developed by Buckel et al (2014). It is a 4-item scale that examines trolling experience, enjoyment of trolling, and identifying with trolling as an internet subculture. Some sample items are as follows: "I have sent people to shock websites for the lulz", "I like to troll people in forums or the comments section of websites", "I enjoy grieving other players in multiplayer games", and "The more beautiful and purer a thing is, the more satisfying it is to corrupt". The scale is rated on a 5-point Likert type scale (ranging from 1= Strongly Disagree to 5 = Strongly Agree). There was no time limit for the completion of the instrument. The scale was found to have a reliability co-efficient of .67 by the original developer. However, the researchers revalidated the scale for the present study on a sample of 102 participants (63 males, 39 females). The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .91, and the Bartlett's test of Sphericity was 5932.64 ($p < .001$), indicating that the sample was sufficient to test for factorial validity of the scale. A one component factor structure of the scale was

extracted and it accounted for 83.11% of the variance. Loadings of the items ranged from .79 to .96. The items yielded high internal consistency reliability, Cronbach's alpha of .97.

Family functioning was assessed using Family APGAR Index developed by Smilkstein (1978). It consists of 5 parameters of family functioning which includes: Adaptability, Partnership, Growth, Affection and Resolve. The acronym APGAR comprised of the first letter of each parameter. The scale contains five items designed to measure a person's satisfaction with social support from the family. Thus, measuring family member's perception of the family function. Sample items include: "I am satisfied with the support I receive from my family when something concerns me", "I am satisfied with how my family discusses issues of common interest and shares the problem solution with me", "My family accepts my desire to promote new activities or make changes in my lifestyle", "I am satisfied with how my family expresses affection and responds to my feeling of love and sadness", "I am satisfied with the time my family and I share". The items were developed on the premise that a family member's perception of family functioning could be assessed by reported satisfaction with the five parameters of family functioning listed above (Smilkstein, 1978). In other words, the statements focus on the emotional, communicative, and social interactive relationships between the respondent and his or her family. The response options describe the frequency of feeling with each parameter on a 3-point likert scale ranging from (hardly ever) which is scored '0' to (almost always) which is scored 2. The total score ranged from 0 to 10; where the scores for each subject was calculated by summing the scores of the five items on the scale with higher score, representing higher perceived functionality of the family.

Specifically, the 3-point scale was interpreted as, (1) 'functional family' (7-10 points), (2) 'moderately dysfunctional family' (4-6 points) and (3) 'severely dysfunctional family' (0-3 points). Smilkstein (1978) reported a reliability co-efficient of .80 to .85 and item-to-total correlations ranged from .50 to .65. The developer's initial assessment of validity was to establish correlations with the previously validated instrument, the Pless-Satterwhite Index or Family Functioning Index (Pless & Satterwhite, 1973), as well as with clinician reports. It yielded a correlation of .80 with the Pless-Satterwhite Index, while the clinician report was .64 correlation coefficient (Smilkstein, 1978). The present researchers revalidated the family functioning measure for on a sample of 102 participants (63 males, 39 females). A one component factor structure of the scale was extracted and it accounted for 84.33% of the variance. Loadings of the items ranged from .89 to .94. The items yielded a high internal consistency reliability, Cronbach's alpha of .95.

The personality factor was also assessed using the Big-Five Inventory (BFI) developed by John et al (1999). It is a self-report measure that assesses the differences in individual characteristic traits using a 5-point scale ranging from 1 (Disagree Strongly) to 5 (Agree strongly). The scale consists of 44-items that measure the five dimensions of personality such as, openness to experience, extraversion, conscientiousness, agreeableness, and neuroticism. The items include: "Is generally trusting", "Does a thorough job", "Tends to be lazy", "Has few artistic interests". Items 6, 21, 31, 2, 12, 27, 37, 8, 18, 23, 43, 9, 24, 34, 35, and 41 are reverse scored so that those who scored low on these items will end up scoring high. Higher score represents higher personality characteristics. Gosling et al (2003) obtained a test-retest reliability of .80. BFI had a mean convergent validity coefficient of .75 and .85 with Big Five Instruments authored by Costa and McCrae (1992) and Goldberg (1990) respectively. Umeh (2004) established divergent validity for the BFI among a sample of Nigerian university undergraduates by correlating the subscales of the BFI with the university Maladjustment scale (Kleinmuntz, 1961) and obtained coefficient of .05, .13, .11, .39, and -.21 for Openness to experience, Conscientiousness, Extraversion, agreeableness, and Neuroticism respectively. The present researchers revalidated the Big Five Inventory (BFI) for the present study on a sample of 102 participants (63 males, 39 females). The items yielded a good internal consistency reliability, Cronbach's alpha of .87.

Procedure

The questionnaires were distributed to the participants in their various schools after seeking for their informed consent. Majorly, school principals gave approval for the distribution of questionnaires in their schools after the researchers presented a letter of identification that was signed by the Department of Psychology, University of Nigeria, Nsukka. After the approval was given, the researchers, and three teachers (research assistants) in their respective schools, proceeded to distribute the copies of the questionnaires to the students. The researchers explained the purpose of the study and at the same time urged them to give their sincere responses on the items with a promise to be kept confidential. Afterwards, the correctly filled questionnaires were collected and subjected to data analysis.

RESULTS

The tables below showed the study hypotheses that were tested.

Table 1: Hierarchical multiple regression predicting trolling by family functioning, extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience, with age and gender as control variables

Predictors	Step 1			Step 2			Step 3		
	<i>B</i>	β	<i>t</i>	<i>B</i>	β	<i>t</i>	<i>B</i>	β	<i>t</i>
Age	-4.76	-.26	-5.94***	-.75	-.04	-1.13	-.16	-.01	-.20
Gender	.54	.03	.70	1.98	.11	3.26	1.56	.09	2.53*
Family functioning				-3.07	-.65	-18.08***	-3.07	-.65	-15.98***
Extraversion							.19	.12	1.61
Agreeableness							.41	.21	3.13**
Conscientiousness							-.29	-.15	-2.91**
Neuroticism							-.23	-.11	-2.61**
Openness to Experience							-.23	-.12	-1.59
<i>R</i> ²		.07			.44			.48	
ΔR^2		.07			.37			.04	
<i>F</i>	17.66 (2, 497)***			228.46 (3, 496)***			56.92 (8, 491)***		
ΔF	17.66 (2, 497)***			326.91 (1, 496)***			8.31 (1, 491)***		

Note. *** $p < .001$; ** $p < .01$; * $p < .05$

Results of the hierarchical multiple regression for the test of the hypotheses is shown in Table 1. In Step 1, age and gender were included in the regression model as control variables due to their significant relationships with some of the main variables in the study as shown in Table 1. It was found that age was negatively associated with trolling, $\beta = -.26$, $p < .001$. The *B* showed that for each one unit rise in age, trolling decreases by -4.76 units. Gender did not significantly predict trolling, $\beta = .11$. The model was significant in step 1, $F(2, 497) = 17.66$, $p < .001$. The demographic factors explained 7% of the variations in trolling ($R^2 = .07$).

Step 2 indicated that family functioning negatively predicted trolling, $\beta = -.65$, $p < .001$. The *B* showed that for each one unit rise in family functioning, trolling decreases by -3.07 units. The model was significant, $F\Delta(1, 496) = 326.91$, $p < .001$. Family functioning explained 43% of the variations in trolling ($R^2 = .43$).

In step 3, the Big Five personality factors were added to the regression model. Extraversion was not a significant predictor of trolling, $\beta = .12$. Agreeableness positively predicted trolling, $\beta = .21$, $p < .01$. The B showed that for each one unit rise in agreeableness, trolling increases by .41 units. Conscientiousness was a significant negative predictor of trolling, $\beta = -.15$, $p < .01$. The B showed that for each one unit rise in conscientiousness, trolling decreases by .29 units. Neuroticism was a significant negative predictor of trolling, $\beta = -.11$, $p < .05$. The B showed that for each one unit rise in neuroticism, trolling decreases by .23 units. Openness to experience negatively predicted trolling, $\beta = -.12$, $p < .01$. The B showed that for each one unit rise in openness to experience, trolling decreases by .23 units. The model was significant in step 3, $F(5, 491) = 8.31$. The five facets of personality explained 4% of the variations in trolling ($R^2 = .04$).

DISCUSSION

The current study examined the predictive role of family functioning and personality traits as factors in trolling among a sample of in-school adolescents in a sub-Saharan Africa. Six hypotheses were tested and the first one which stated that family functioning will significantly predict online trolling in a sample of sub-Saharan African in-school adolescents was accepted and confirmed because the results revealed that family functioning negatively predicted trolling. This shows that good family functioning was associated with decrease in levels of online trolling. This is in line with the works of Hair et al (2002; Pineda et al., 2023; Saulnier, & Krettenauer, 2023) who reported that the development of good online manner appears to be related to high quality parent-adolescent relationship; and that the digital preferences and media-infused experiences also affect how families relate to each other inside and outside of the home (Johnson & Francis, 2022).

The hypotheses that openness to experience, extraversion, and neuroticism will significantly predict online trolling among in-school adolescents were tested. The results of the present study revealed that openness to experience negatively predicted online trolling; showing that rise in openness to experience, results to decrease in trolling. The reason may be because adolescents who are high in this kind of trait are likely to speak out, explore the source of the threat and are ready to resist the attack (trolling) quite unlike those of them who are withdrawn and may prefer to remain silent and this is likely to ignite the attack.

Neuroticism negatively predicted online trolling, while extraversion was not a significant predictor of online trolling among in-school adolescents. Therefore, both hypotheses that were stated in positive direction were rejected. This contradicts the findings of previous researchers (e.g, Craker & March, 2016 Liu & Campbell, 2017; Bowden-Green et al., 2020) who reported in their researches that neuroticism and extraversion are implicated in online trolling. One plausible reason for the inconsistency may be due to different sample size of those studies, and also in the ways the samples were selected. For instance, the present study covered Nsukka urban located in eastern region which is an example of a sub-Saharan Africa and a different context altogether compared to the areas covered by previous researchers. Secondly, in previous studies most of them employed convenient sampling technique in the selection process while the present study employed stratified sampling technique during the process of selection. Thirdly, it may be that most adolescents who participated in the present study were at the developmental stage of late adolescence, and therefore have demonstrated calmness in using online platform for activities like trolling; since researchers (e.g, Roberts et al., 2006; Scollon & Diener, 2006) have shown that emotional stability increases with age. Thus neuroticism generally decreases with age. In addition, due to the conservative nature of African culture, it may be that Nigerian adolescents studied tried to present themselves in positive direction due to social desirability factors which also affected the result of the present study.



We hypothesized in the present study that conscientiousness and agreeableness will not predict online trolling with the present sample. The results revealed that conscientiousness was a significant negative predictor of trolling; indicating that increase in conscientiousness was associated with decrease in trolling. Therefore, the hypothesis is accepted. This collaborates with the findings of previous scholars (e.g, Sest & March, 2017; Etudo et al, 2019; Gulfason et al., 2021; March et al, 2023) that higher conscientiousness predicted trolling behavior. Thus, trolling is deliberate, can include strategic coordination, and therefore may not display low conscientiousness, and agreeableness positively predicted trolling; indicating that rise in agreeableness was associated with increase in trolling. Thus, our hypothesis which stated that agreeableness will not significantly predict online trolling with the present sample was rejected. This contradicts the findings of previous scholars (e.g, Sest & March, 2017; Etudo et al, 2019; Gulfason et al., 2021; March et al, 2023). This may be because of the different methodology, different sample and a different context involved in the present study.

Conclusion

This study has concluded that both contextual (family functioning) and personal (personality) factors are implicated in online trolling among in-school adolescents though there are mixed views among scholars. Understanding both factors can inform development of rightful interventions. In addition, the study concluded that online trolling is a new area of research with dearth of empirical findings from developing nations; therefore, further research should be done in examining risk factors of trolling behavior in order to gain a better understanding of the behavior.

Recommendations

Following the limitations below, it is suggested that future studies in this area should use a larger sample size which also incorporate multi-ethnic groups in Nigeria, if possible, engage in a comparative study of different ethnic groups in order to understand the complexity of trolling. More research should also be carried out using longitudinal method, and also studying both mediating and moderating variables.

Limitations of the Study

The study has some shortcomings which one of them is that the study was conducted among a particular ethnic group; as such multi-cultural variables were not factored in the findings. Secondary, we should not neglect the potential impact of social desirability bias. Social desirability bias could have led participants to answer questions about social desirability attitudes states and behaviours in positive directions. Anonymity or confidentiality promised and assurance to participants that the responses were totally academic may have reduced it, but not eliminated this threat. Thirdly, the generalizability of the findings may be limited to in-school adolescent students. Also, the sample size used in this study is small and might also affect the generalization of the findings or results.



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