

## The Role of Social Media and Parenting Styles as Determinants of Deviant Behaviours of Adolescents in Secondary Schools Within Kaduna Metropolis

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### Abstract

*This study investigated the individual and combined predictive roles of social media usage and parenting styles in relation to deviant behaviours among secondary school adolescents in Kaduna Metropolis, Nigeria. A quantitative cross-sectional survey design was employed. Using multistage sampling, 400 senior secondary school students aged 13 to 17 years were selected from public and private schools across Kaduna North and Kaduna South Local Government Areas. Data were collected using validated instruments comprising the Social Media Scale, Parenting Styles Inventory, and Deviant Behaviours Scale. Data were analysed using descriptive statistics, simple linear regression, and multiple linear regression at a 0.05 level of significance. Social media usage significantly and positively predicted deviant behaviours,  $t(398) = 6.52, p < .001, F(1, 398) = 42.51, p < .001, R^2 = .097$ , accounting for approximately 9.7% of the variance. Parenting styles also significantly and negatively predicted deviant behaviours,  $t(398) = -5.83, p < .001, F(1, 398) = 33.99, p < .001, R^2 = .079$ , explaining approximately 7.9% of the variance, with authoritative parenting associated with lower deviance and authoritarian, permissive, and neglectful parenting associated with higher deviance. The combined model yielded the strongest predictive power,  $F(2, 397) = 403.02, p < .001, R = .819, R^2 = .670$ , with both variables jointly accounting for approximately 67.0% of the variance in deviant behaviours. No significant interaction effect was found,  $\Delta R^2 = .01, \Delta F(1, 396) = 1.24, p = .27$ , indicating additive rather than multiplicative combined effects. The findings underscore the need for dual-focused interventions that simultaneously promote authoritative parenting practices and equip families with digital literacy skills. Schools should integrate digital citizenship education into curricula and strengthen counselling services. Policymakers should develop comprehensive frameworks for adolescent online safety and parental digital education programmes. This study provides empirical evidence from an under-researched northern Nigerian context and demonstrates the combined predictive power of social media and parenting styles in relation to adolescent deviance.*

**Keywords:** social media, parenting styles, deviant behaviours, adolescents, secondary schools

## Introduction

Adolescent deviant behaviour, encompassing substance abuse, truancy, bullying, cybercrime, and examination malpractice, has become a pressing global concern (Clinard & Meier, 2016; Goode, 2015). The World Health Organisation (2022) estimates that approximately 20% of adolescents worldwide experience behavioural or mental health disorders that impair their social, emotional, and academic functioning. Among the most significant contemporary influences on adolescent behaviour are the proliferation of digital communication technologies and evolving family dynamics, whose convergence creates challenges warranting investigation, particularly in under-researched contexts like sub-Saharan Africa (Ahmad et al., 2021; Mascheroni et al., 2018).

Social media platforms, including Facebook, Instagram, TikTok, WhatsApp, and Snapchat, have become integral to adolescent life, with global data indicating average daily engagement of three to five hours (DataReportal, 2024; Valkenburg et al., 2022). While these platforms offer opportunities for social connection, education, and creative expression, evidence documents their potential to facilitate deviant tendencies (Best et al., 2014; Keles et al., 2020). Excessive and unsupervised social media use is linked to depression, anxiety, poor academic performance, and exposure to violent content, cyberbullying, and reinforcement of antisocial conduct through likes and shares (Kowalski et al., 2019; Vannucci et al., 2020; Wartberg et al., 2021). These associations are theoretically grounded in social learning processes, where adolescents observe and reproduce behaviours modelled by peers and influencers that appear to yield social rewards (Bandura, 1977; Nesi & Prinstein, 2019).

Concurrently, parenting styles remain robust predictors of adolescent outcomes. Baumrind's (1966, 1991) typology, expanded by Maccoby and Martin (1983), identifies four parenting configurations based on parental responsiveness and demandingness. Authoritative parenting, combining warmth with firm control, consistently predicts self-regulation, academic competence, and reduced deviance (Kuppens & Ceulemans, 2019; Pinquart, 2017). Authoritarian parenting predicts aggression and rebellion; permissive parenting predicts poor impulse control and substance use; and neglectful parenting demonstrates the strongest associations with delinquency (Hoeve et al., 2009; Lamborn et al., 1991; Darling & Steinberg, 1993).

The digital age has complicated parenting, requiring digital parenting competencies including online activity awareness, boundary-setting, and open communication about digital risks (Livingstone & Blum-Ross, 2020; Symons et al., 2017). Many parents face barriers including limited digital literacy and time constraints, with this digital parenting gap particularly pronounced in developing countries (Ahmad et al., 2021; Johnson & Adeoye, 2018). In Nigeria, with over 220 million people and a median age of approximately 18 years, internet penetration reached 55.4% in 2023, with adolescents as predominant social media users (NCC, 2023; National Population Commission, 2022). Nigerian adolescents spend three to six hours daily on social media, exposed to cyberbullying, pornography, and glamorisation of internet fraud, locally termed Yahoo Yahoo (Onuoha & Saheed, 2019; Uche & Amaka,

2019). The Nigerian family system has transformed due to urbanisation and economic pressures, with nuclear families replacing extended kinship networks and working parents having less time to monitor (Akintunde et al., 2021; Oladipo & Osuolale, 2017).

Kaduna Metropolis, with an estimated 1.6 million residents, exemplifies these converging dynamics. The city is characterised by ethnic and religious diversity, with predominantly Hausa-Fulani Muslim and substantial Christian populations, creating a complex environment where traditional Islamic values, Western influences, and urban lifestyles intersect (Kaduna State Bureau of Statistics, 2022). Secondary school enrollment has increased, but reports document escalating truancy, substance abuse, gang involvement, and cybercrime among students (Kaduna State Ministry of Education, 2023). Parental responses range from strict authoritarian approaches that may be associated with rebellion to permissive or neglectful approaches, driven by economic pressures or limited digital awareness (Akintunde et al., 2021; Asuquo, 2022). Despite these challenges, empirical research examining the combined influence of social media and parenting styles on adolescent deviance in northern Nigeria remains limited. Existing studies have focused on either variable in isolation, predominantly in southern cities like Lagos and Ibadan (Johnson & Adeoye, 2018; Oladipo & Osuolale, 2017). The distinct socio-cultural context of northern Nigeria necessitates dedicated investigation.

Adolescent deviant behaviours, including truancy, substance abuse, cyberbullying, examination malpractice, and gang involvement, have become increasingly prevalent among secondary school students in Kaduna Metropolis, disrupting educational outcomes and threatening healthy development. Despite growing concern, these behaviours continue to rise, indicating that existing interventions have proven inadequate. The problem is compounded by the convergence of two powerful influences in adolescents' daily lives. First, students spend several hours daily on social media platforms, exposing them to content that glamorises internet fraud, substance use, and materialistic lifestyles, while platform features enable peer validation of norm-violating conduct. Second, parenting practices across the metropolis vary considerably, with many parents facing economic pressures that reduce supervision time and lacking the digital literacy necessary to monitor their children's online activities. This digital divide means many adolescents navigate the online world without meaningful adult guidance.

Efforts to address adolescent deviance have included school disciplinary measures, guidance and counselling services, community youth programmes, and government awareness campaigns. However, these interventions have largely failed to curb the problem. Current approaches tend to be reactive rather than preventive, punishing deviance after it occurs without addressing its underlying causes. School programmes operate in isolation from families, ignoring the home environment's role in shaping behaviour. Most critically, interventions have failed to address the interaction between social media influence and parenting. Programmes targeting social media use seldom incorporate parental involvement, while parenting initiatives rarely address the digital landscape in which contemporary adolescents develop. A fundamental knowledge gap underlies these intervention failures. Research has

separately established that social media exposure is associated with adolescent behaviour and that parenting styles predict behavioural outcomes. However, little is understood about how these factors operate together, specifically whether parenting styles buffer against negative social media associations or whether ineffective parenting amplifies digital risks. This gap is particularly acute in Kaduna Metropolis, where unique socio-cultural dynamics, religious diversity, economic challenges, and evolving family structures may shape how these factors interact. Most existing research has been conducted in Western contexts or southern Nigerian cities, leaving a significant contextual void regarding northern Nigeria.

The absence of empirical evidence on the combined influence of social media usage and parenting styles on adolescent deviance severely limits the development of effective interventions. Stakeholders are forced to rely on assumptions and fragmented approaches, risking misdirected efforts that target symptoms rather than causes or interventions culturally inappropriate for the communities they aim to serve. This study addresses this gap by systematically examining the predictive relationships among social media usage, parenting styles, and deviant behaviours among secondary school adolescents in Kaduna Metropolis, providing evidence to inform comprehensive, contextually appropriate interventions that simultaneously address digital environments and family functioning.

The following research questions guided this investigation: (i) How does social media usage relate to deviant behaviours among adolescents in secondary schools within Kaduna Metropolis? (ii) What is the relationship between different parenting styles and deviant behaviours among adolescents in secondary schools within Kaduna Metropolis? (iii) To what extent do social media usage and parenting styles collectively predict deviant behaviours among adolescents in secondary schools within Kaduna Metropolis?

The overarching aim of this study was to investigate the roles of social media use and parenting styles as predictors of deviant behaviours among secondary school adolescents in the Kaduna Metropolis, Kaduna State, Nigeria. The specific objectives were to: (i) examine the relationship between social media usage and deviant behaviours among adolescents in secondary schools within Kaduna Metropolis; (ii) assess the relationship between parenting styles and deviant behaviours among adolescents in secondary schools within Kaduna Metropolis; and (iii) investigate the combined predictive effect of social media usage and parenting styles on deviant behaviours among adolescents in secondary schools within Kaduna Metropolis.

## **Literature Review**

### **Conceptual Review**

Social media refers to internet-based applications enabling user-generated content creation and exchange within virtual communities (Kaplan & Haenlein, 2010). Unlike traditional media's one-to-many broadcast model, social media facilitates interactive, many-to-many communication (Carr & Hayes, 2015). These platforms have evolved into complex digital ecosystems integrating text, images,

video, and live streaming, fundamentally altering adolescent communication, identity formation, and information engagement (Valkenburg et al., 2022). Key platforms among adolescents include Instagram, popular for visual content and influencer culture (Anderson & Jiang, 2018); TikTok, distinguished by algorithmic content recommendation (Valkenburg et al., 2022); and WhatsApp, dominant in Nigeria for individual and group communication (NCC, 2023). Additional platforms include Facebook, Snapchat, X (formerly Twitter), and Telegram (DataReportal, 2024). Global surveys indicate adolescents spend three to five hours daily on social media, with peaks during after-school hours and weekends (Anderson & Jiang, 2018; Twenge et al., 2019). Usage purposes include peer connection, entertainment, information seeking, self-expression, and identity experimentation (Best et al., 2014; Nesi & Prinstein, 2019). Nigerian adolescents demonstrate similarly intensive usage, accessing platforms via affordable smartphones and maintaining multiple active accounts (Onuoha & Saheed, 2019; Johnson & Adeoye, 2018).

Social media's developmental significance stems from convergence between platform affordances and adolescent developmental tasks of identity formation, peer navigation, and values clarification (Steinberg, 2014). These platforms offer spaces for identity experimentation, continuous peer connection, and self-expression (Valkenburg & Peter, 2013). However, these same affordances become risk factors through harmful content exposure, problematic social comparisons, cyberbullying, and compulsive usage (Keles et al., 2020; O'Reilly et al., 2018). Positive outcomes include enhanced social support and civic engagement opportunities; negative outcomes include depression, anxiety, poor body image, and normalisation of risky behaviours (Best et al., 2014; Kowalski et al., 2019; Vannucci et al., 2020). Effects are moderated by the quality of online experience, individual vulnerability, and the availability of adult guidance (Nesi & Prinstein, 2019).

Parenting styles represent characteristic patterns of attitudes, behaviours, and emotional climates in parent-child interactions (Darling & Steinberg, 1993). Baumrind (1966, 1971) identified three configurations: authoritative, authoritarian, and permissive. Maccoby and Martin (1983) expanded this to four categories by distinguishing permissive-indulgent from permissive-neglectful parenting. These styles are defined by two dimensions: parental responsiveness (warmth, emotional availability, communication openness) and parental demandingness (behavioural control, maturity expectations, consistent discipline) (Baumrind, 1991). Authoritative parenting combines high responsiveness with high demandingness, providing clear standards with emotional warmth and rational explanations (Baumrind, 1966). These parents foster autonomy within boundaries, encouraging verbal exchange and recognising individual interests (Steinberg & Silk, 2020). Adolescents from authoritative homes demonstrate higher social competence and self-regulation and lower problem behaviours (Kuppens & Ceulemans, 2019; Pinquart, 2017). Authoritarian parenting features high demandingness with low responsiveness, emphasising obedience without explanation and employing punitive discipline (Baumrind, 1966). Communication is unidirectional, resulting in lower self-esteem, poorer social skills,

and increased internalising and externalising problems (Hoeve et al., 2009; Lamborn et al., 1991). Permissive parenting combines high responsiveness with low demandingness, providing emotional warmth without boundaries or consistent discipline (Maccoby & Martin, 1983). This approach predicts poor impulse control, academic underachievement, and risky behaviours (Darling & Steinberg, 1993). Neglectful parenting features low responsiveness and demandingness, with emotional detachment and minimal involvement. This style consistently demonstrates strongest associations with delinquency, substance abuse, and psychological maladjustment (Hoeve et al., 2009; Macfie et al., 2001). Cultural variations exist in the expression and effects of parenting styles. In African societies, parenting may reflect communal socialisation goals and extended family involvement (Oladipo & Osuolale, 2017). Authoritarian parenting may be more normative in cultures prioritising respect for elders (Kuppens & Ceulemans, 2019). In Nigeria, urbanisation has introduced diversity in parenting practices (Akintunde et al., 2021; Asuquo, 2022).

Deviant behaviour encompasses actions violating established social norms within specific contexts (Clinard & Meier, 2016). Deviance is socially constructed, with definitions arising from social reactions rather than from inherent qualities of acts (Becker, 1963; Goode, 2015). Sociological perspectives include Durkheim's (1895) view of deviance as functional for boundary clarification, Merton's (1938) strain theory linking deviance to goals-means disjuncture, Becker's (1963) labelling theory emphasising social reactions, and Agnew's (2019) general strain theory integrating multiple strain sources. Psychological perspectives emphasise social learning mechanisms where deviance is acquired through observation and reinforcement (Bandura, 1977). Developmental perspectives highlight how adolescent identity formation and autonomy seeking create vulnerability to deviance (Steinberg, 2014). Among secondary school students, common deviant behaviours include truancy, academic dishonesty increasingly facilitated by smartphones, cyberbullying, substance use, and gang involvement (Adebayo & Uche, 2017; Kowalski et al., 2019; Vannucci et al., 2020). Nigerian studies document truancy, examination malpractice, substance abuse, and participation in cybercrime (Uche & Amaka, 2019; Akintunde et al., 2021; Johnson & Adeoye, 2018). Kaduna State has documented increasing student deviance, though systematic research remains limited (Kaduna State Ministry of Education, 2023).

## **Theoretical Framework**

This study integrates Bandura's (1977) Social Learning Theory and Baumrind's (1966, 1991) Parenting Styles Theory to examine how media modelling and parental socialisation collectively relate to adolescent deviance. Social Learning Theory posits that individuals acquire behaviours through observation, imitation, and reinforcement (Bandura, 1977). The Bobo doll experiments demonstrated that children imitated observed aggressive behaviour, particularly when the models received rewards, thereby establishing the role of vicarious reinforcement in learning. Four processes govern observational learning: attention to modelled events, influenced by model characteristics; retention through cognitive representation; motor reproduction, translating representations into behaviour; and

motivation, encompassing external, vicarious, and self-reinforcement (Bandura, 1977). In digital environments, social media amplifies these processes. Platforms expose adolescents to diverse behavioural models through algorithmically selected content (Valkenburg et al., 2022). Feedback mechanisms (likes, comments, shares) serve as reinforcement signals, increasing motivation to imitate behaviours receiving social validation (Kowalski et al., 2019). Research supports this application: Nesi and Prinstein (2019) found peer risk behaviour content predicted subsequent adolescent risk behaviour; Wartberg et al. (2021) linked viewing substance use content with increased engagement; and Uche and Amaka (2019) documented that following accounts glamorising cybercrime predicted fraud intentions among Nigerian adolescents. Limitations include overemphasis on environmental factors and insufficient attention to cognitive mediation processes (Akers, 2009; Smith, 2010).

Parenting Styles Theory holds that parenting configurations create the primary socialisation context for child development (Darling & Steinberg, 1993). Authoritative parenting promotes positive outcomes through secure attachment, facilitating exploration; rational explanations, promoting value internalisation; open communication, modelling prosocial skills; and consistent boundaries, enabling graduated autonomy (Kuppens & Ceulemans, 2019; Pinquart, 2017; Steinberg & Silk, 2020). Non-authoritative styles are associated with increased risk of deviance: authoritarian parenting is associated with rebellion through punitive control (Lamborn et al., 1991); permissive parenting is associated with poor impulse control through the absence of boundaries (Darling & Steinberg, 1993); neglectful parenting poses the greatest risk through the absence of connection and structure (Hoeve et al., 2009). Empirical support is extensive. Pinquart's (2017) meta-analysis of over 1,400 studies confirmed that authoritative parenting was associated with the lowest levels of externalising problems, and neglectful parenting with the highest levels of deviance. Hoeve et al. (2009) found poor monitoring, harsh discipline, and low support predicted delinquency across 161 studies. Critiques include cultural boundedness, with questions about the model's applicability in non-Western societies with extended family involvement and communal values (Kuppens & Ceulemans, 2019; Oladipo & Osuolale, 2017), and insufficient attention to bidirectional parent-child influences (Steinberg & Silk, 2020).

These theories complement each other: Social Learning Theory explains mechanisms of media influence, while Parenting Styles Theory explains family influences on susceptibility to external factors (Mascheroni et al., 2018). Integration suggests parenting styles may moderate social media associations, with authoritative parenting buffering against negative digital influence and non-authoritative parenting amplifying risks (Ahmad et al., 2021). Research supports this integration: Livingstone and Blum-Ross (2020) found that active parental mediation was more protective than restrictive approaches; Johnson and Adeoye (2018) reported that parental monitoring moderated social media-deviance associations among Nigerian adolescents. This study extends prior research by examining how the full parenting style spectrum relates to social media use in predicting deviance in the Kaduna Metropolis.

## **Empirical Review**

Research consistently links intensive, unsupervised social media use with elevated adolescent deviance. Kowalski et al. (2019), in a 131-study meta-analysis, found moderate to strong associations between social media use and cyberbullying perpetration and victimisation. Nesi and Prinstein (2019) demonstrated, using longitudinal data, that exposure to peer risk-behaviour content predicted subsequent increases in adolescent risk behaviour. Vannucci et al. (2020) found significant positive associations between social media use and substance use and risky sexual behaviour across 27 studies, with stronger effects for content-specific exposure than overall usage time. In Nigeria, Uche and Amaka (2019) found that adolescents exceeding 4 hours of daily social media use scored significantly higher on measures of truancy, cyberbullying, and substance use, with internet fraud content being particularly influential. Johnson and Adeoye (2018) documented that parental monitoring significantly moderated the association between social media use and deviance. Wartberg et al. (2021) distinguished problematic from general use, finding problematic use to be a stronger predictor of deviance, with evidence of bidirectional effects. The literature reveals important nuances: effects are stronger for deviance-related content exposure, problematic use patterns, and the presence of offline risk factors.

Extensive research supports the predictions of Parenting Styles Theory. Pinquart (2017) confirmed authoritative parenting is associated with the lowest externalising problems and neglectful parenting with the highest deviance across 1,400 studies. Hoeve et al. (2009) found parental monitoring the strongest protective factor against delinquency across 161 studies. Steinberg and Silk (2020) confirmed authoritative practices predict positive outcomes across multiple domains. In Nigeria, Akintunde et al. (2021) found that authoritative parenting predicted lower deviance, whereas neglectful parenting predicted higher deviance among Osun State students. Oladipo and Osuolale (2017) reported neglectful parenting as the strongest deviance predictor in Ibadan, with authoritarian parenting associated with aggression. Asuquo (2022) found the combination of warmth and appropriate control to be most protective across multiple states, including Kaduna, while noting that economic pressures limit effective parenting.

Emerging research demonstrates interactive effects between social media and parenting on adolescent behaviour. Mascheroni et al. (2018) found parenting styles influenced adolescent digital behaviour and online risk vulnerability across eight European countries. Ahmad et al. (2021) demonstrated that parenting styles significantly moderated the associations between social media use and deviance, with the relationship weakest among authoritatively parented adolescents and strongest among those with neglectful parents. These findings underscore the need for dual-focused interventions addressing both digital environments and family functioning.

Based on the theoretical framework and empirical literature reviewed, the following hypotheses were formulated and tested in this study: (i) Social media usage will significantly predict deviant behaviours among adolescents in secondary schools in Kaduna Metropolis. (ii) Authoritative parenting will negatively predict deviant behaviours, while authoritarian, permissive, and neglectful parenting will

positively predict deviant behaviours among adolescents in secondary schools in Kaduna Metropolis.

(iii) Social media usage and parenting styles will jointly predict deviant behaviours among adolescents in secondary schools in Kaduna Metropolis.

## **Methodology**

This study adopted a quantitative, cross-sectional, descriptive survey design. This design was considered appropriate because it enables the systematic collection of data from a sizable population at a single point in time and allows for the examination of relationships among variables without researcher manipulation (Creswell & Creswell, 2018). The descriptive survey design is particularly suited for studies that seek to describe existing phenomena, assess prevailing conditions, and examine associations among measured variables as they naturally occur (Nworgu, 2015). Given that this study aimed to examine the relationships between social media use and parenting styles and deviant behaviours among adolescents, a design that enables statistical analysis of predictive relationships was deemed most appropriate.

This study was conducted in Kaduna Metropolis, Kaduna State, located in northwestern Nigeria. Kaduna Metropolis encompasses Kaduna North and Kaduna South Local Government Areas and serves as the administrative, commercial, and industrial capital of Kaduna State. The metropolis has an estimated population of 1.6 million residents, comprising the Hausa-Fulani ethnic group predominantly alongside significant minority populations from various Nigerian ethnic backgrounds (Kaduna State Bureau of Statistics, 2022). The city is characterised by religious diversity, with substantial Muslim and Christian communities coexisting within its boundaries. Economically, Kaduna Metropolis hosts manufacturing industries, educational institutions, government establishments, and a vibrant informal sector. The city faces challenges including high youth unemployment, poverty in certain areas, and strains on educational and social service infrastructure. The selection of Kaduna Metropolis was based on its status as a major northern Nigerian urban centre experiencing the intersection of rapid digital technology adoption, evolving family structures, and documented concerns regarding adolescent behavioural issues.

The target population for this study comprised all senior secondary school students (SS 1 to SS 3) enrolled in public and private secondary schools within Kaduna Metropolis. According to the Kaduna State Ministry of Education (2023), there are approximately 186 registered secondary schools in the Kaduna North and Kaduna South Local Government Areas, with a combined senior secondary student population of 45,000. This population included both male and female adolescents aged between 13 and 17 years from diverse socioeconomic, ethnic, and religious backgrounds.

The sample size for this study was determined using the Taro Yamane formula for finite populations. Based on an estimated population of 45,000 senior secondary students and a 5% margin of error, a minimum sample size of 397 was calculated. To account for potential non-response and incomplete questionnaires, the sample size was increased to 450 students. A multistage sampling technique was

employed to select participants. In the first stage, Kaduna Metropolis was stratified into its two constituent Local Government Areas: Kaduna North and Kaduna South. In the second stage, a list of all registered public and private secondary schools in each Local Government Area was obtained from the Kaduna State Ministry of Education. Ten schools (five public and five private) were randomly selected from each Local Government Area using simple random sampling, yielding a total of 20 schools. In the third stage, the selected schools were stratified by class level (SS 1, SS 2, and SS 3), and students were proportionately selected from each class level. In the final stage, individual students within each selected class were selected using systematic random sampling, in which every fifth student on the class register was selected until the required number of respondents per school was reached. This multistage approach ensured adequate representation across school types, locations, and class levels.

Data for this study were collected using a structured questionnaire comprising four sections. The questionnaire was self-administered and designed to gather information on demographic characteristics, social media usage, parenting styles, and deviant behaviours. Section A collected demographic information including respondents' age, gender, class level, school type, family structure, and parents' educational background and occupation. Section B comprised the Social Media Scale developed by Jenkins-Guarnieri, Wright, and Johnson (2013). The scale consists of 23 items measuring dimensions of social media engagement including frequency of use, diversity of platforms, and nature of content consumption. Items are rated on a 5-point Likert scale ranging from 1 (Never) to 5 (Always). The scale has demonstrated strong psychometric properties, with the original developers reporting a Cronbach's alpha coefficient of 0.87. The scale has been validated across different adolescent populations, including in African contexts (Balogun et al., 2018). For this study, the scale was adapted to reflect platforms commonly used by Nigerian adolescents, including Facebook, Instagram, TikTok, WhatsApp, Snapchat, and X (formerly Twitter).

Section C comprised the Parenting Styles Inventory, based on Baumrind's (1966, 1971) typology and the work of Robinson, Mandleco, Olsen, and Hart (1995). The inventory consists of 32 items, with eight items corresponding to each of the four parenting styles: authoritative, authoritarian, permissive, and neglectful. Respondents rate their perceptions of their parents' behaviours on a 5-point Likert scale from 1 (Never) to 5 (Always). The inventory demonstrates robust psychometric properties, with Cronbach's alpha values ranging from 0.78 to 0.89 across subscales (Robinson et al., 1995). The instrument has been validated in Nigerian settings (Akintunde et al., 2021). The Parenting Styles Inventory yields four separate subscale scores corresponding to authoritative, authoritarian, permissive, and neglectful parenting. The four subscales were treated as the primary variables in this study. In addition, an exploratory composite index was computed by summing the authoritative subscale score and subtracting the combined scores of the authoritarian, permissive, and neglectful subscales. This composite represents overall parenting quality, with higher scores indicating predominantly authoritative parenting and lower scores indicating predominantly non-authoritative parenting. The

composite is reported as an exploratory index only; the four subscales provide the primary basis for interpretation.

Section D comprised the Deviant Behaviours Scale, adapted from the work of Adebayo and Uche (2017) and incorporating items from established measures of adolescent misconduct. The scale consists of 25 items measuring various forms of deviant behaviour, including truancy, cyberbullying, substance use, academic dishonesty, and disrespect for authority. Items are rated on a 5-point Likert scale from 1 (Never) to 5 (Very Frequently). The scale has demonstrated strong internal consistency in Nigerian studies, with Cronbach's alpha values ranging from 0.78 to 0.86 (Adebayo & Uche, 2017).

The validity of the instruments was established through both face and content validity procedures. The questionnaire was subjected to expert review by three specialists: one in educational psychology, one in measurement and evaluation, and one in adolescent development. The experts assessed the instruments for item clarity, language appropriateness, relevance to the research objectives, and coverage of the construct domains. Feedback from the expert review was used to modify ambiguous items, remove redundant items, and ensure cultural appropriateness for the Nigerian adolescent population. A pilot study was conducted to establish the reliability of the instruments and to identify any practical challenges with administration. The pilot study involved 50 senior secondary students from two schools in Kaduna Metropolis that were not included in the main study. Data from the pilot study were analysed using Cronbach's alpha coefficient to determine internal consistency. The results showed acceptable reliability: Social Media Scale ( $\alpha = 0.84$ ); Parenting Styles Inventory ( $\alpha = 0.81$  for authoritative, 0.79 for authoritarian, 0.76 for permissive, and 0.82 for neglectful); and Deviant Behaviours Scale ( $\alpha = 0.85$ ). These values exceeded the minimum acceptable threshold of 0.70 recommended by Nunnally and Bernstein (1994).

Prior to data collection, ethical approval was obtained from the Kaduna State Ministry of Education. Permission letters were then sent to the principals of the selected schools, explaining the purpose of the study and requesting access to students. Upon receiving school approval, parental consent forms were distributed to students to obtain parental or guardian consent. Only students who returned signed parental consent forms and personally assented to participate were included in the study. Data collection took place over four weeks during the 2023/2024 academic session. Questionnaires were administered during school hours, typically during free periods or break times, to minimise disruption to academic activities. The researcher, assisted by trained research assistants who were graduate students in education, visited each school on scheduled dates. At each administration session, the study's purpose was explained to students, and they were assured that their responses would be kept confidential and anonymous. Students were informed that participation was voluntary and that they could withdraw at any time without consequences. Questionnaires were distributed and collected immediately upon completion, with an average completion time of 25-30 minutes. A total of 450 questionnaires were

distributed, of which 428 were returned. After screening for completeness, 400 questionnaires were deemed valid for analysis, representing an 88.9% response rate.

Data collected from the field were first screened for completeness and accuracy. Valid questionnaires were coded and entered into the Statistical Package for the Social Sciences (SPSS) version 26 for analysis. Data analysis was conducted at two levels: descriptive and inferential. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarise the demographic characteristics of respondents and to describe the levels of social media usage, parenting styles, and deviant behaviours among the sample. Inferential statistics were employed to test the hypotheses formulated for the study. Simple linear regression analysis was used to test hypothesis one, examining the predictive relationship between social media usage and deviant behaviours. Simple linear regression was also used to test hypothesis two, first using the exploratory parenting styles composite score, and subsequently examining each parenting style separately. Multiple linear regression analysis was used to test hypothesis three, examining the combined predictive effect of social media usage and parenting styles on deviant behaviours. Additionally, an exploratory moderation analysis was conducted using hierarchical regression with an interaction term created by centring and multiplying social media usage and parenting styles scores. Prior to regression analyses, assumptions of linearity, normality, homoscedasticity, multicollinearity, and independence of errors were tested and confirmed. All hypotheses were tested at a 0.05 level of significance.

Ethical approval was obtained from the Kaduna State Ministry of Education, and permission was secured from principals of participating schools. As respondents were minors, informed consent was obtained from parents or guardians after they received information sheets detailing the study's purpose, procedures, risks, and benefits. Students, with parental consent, also provided personal assent before participating. Participation was voluntary, and respondents could withdraw at any time without penalty. Anonymity and confidentiality were ensured by excluding identifying information from questionnaires, securely storing data, and aggregating responses for analysis. The study posed minimal risk, though provision was made to refer distressed students to school counsellors. No incentives were offered to avoid coercion. A debriefing session addressed participant questions, and the principles of beneficence, respect for persons, and justice guided the entire research process.

## Results

### Demographic Characteristics of Respondents

**Table 1:** Distribution of Respondents by Gender, Age, and Class Level

| Variable    | Category | Frequency (n) | Percentage (%) |
|-------------|----------|---------------|----------------|
| Gender      | Male     | 215           | 53.8           |
|             | Female   | 185           | 46.2           |
|             | Total    | 400           | 100.0          |
| Age (Years) | 13       | 28            | 7.0            |
|             | 14       | 72            | 18.0           |

|             |       |     |       |
|-------------|-------|-----|-------|
|             | 15    | 118 | 29.5  |
|             | 16    | 124 | 31.0  |
|             | 17    | 58  | 14.5  |
|             | Total | 400 | 100.0 |
| Class Level | SS 1  | 142 | 35.5  |
|             | SS 2  | 138 | 34.5  |
|             | SS 3  | 120 | 30.0  |
|             | Total | 400 | 100.0 |

Mean age = 15.4 years, SD = 1.21

Table 1 presents the gender, age, and class level distribution of respondents. The sample comprised 215 males (53.8%) and 185 females (46.2%), indicating a slightly higher proportion of male participants. Respondents ranged in age from 13 to 17 years, with a mean age of 15.4 years (SD = 1.21). The modal age was 16 years (31.0%), followed by 15 years (29.5%). Distribution across class levels showed 142 students (35.5%) in SS 1, 138 (34.5%) in SS 2, and 120 (30.0%) in SS 3, reflecting a relatively balanced representation across senior secondary classes.

**Table 2:** Distribution of Respondents by School Type and Family Structure

| Variable         | Category     | Frequency (n) | Percentage (%) |
|------------------|--------------|---------------|----------------|
| School Type      | Public       | 228           | 57.0           |
|                  | Private      | 172           | 43.0           |
|                  | Total        | 400           | 100.0          |
| Family Structure | Both Parents | 245           | 61.3           |
|                  | Mother Only  | 72            | 18.0           |
|                  | Father Only  | 38            | 9.5            |
|                  | Guardian     | 45            | 11.3           |
|                  | Total        | 400           | 100.0          |

Table 2 displays the school type and family structure of respondents. Students from public schools constituted 228 (57.0%) of the sample, while 172 (43.0%) attended private schools, providing representation from both educational sectors. Regarding family structure, the majority of students (245, 61.3%) lived with both parents. Those living with mother only numbered 72 (18.0%), father only 38 (9.5%), and guardians 45 (11.3%), indicating that over a third of respondents (38.8%) were from non-intact family arrangements.

**Table 3:** Distribution of Respondents by Parents' Educational Attainment

| Variable          | Category            | Father n (%) | Mother n (%) |
|-------------------|---------------------|--------------|--------------|
| Educational Level | No Formal Education | 45 (11.3)    | 68 (17.0)    |
|                   | Primary Education   | 82 (20.5)    | 95 (23.8)    |
|                   | Secondary Education | 156 (39.0)   | 148 (37.0)   |
|                   | Tertiary Education  | 117 (29.3)   | 89 (22.3)    |
|                   | Total               | 400 (100.0)  | 400 (100.0)  |

Table 3 shows parents' educational attainment. For fathers, the largest proportion had secondary education (39.0%), followed by tertiary education (29.3%), primary education (20.5%), and no formal education (11.3%). For mothers, secondary education was also most common (37.0%), followed by

primary education (23.8%), tertiary education (22.3%), and no formal education (17.0%). Overall, fathers demonstrated slightly higher educational attainment compared to mothers.

## Descriptive Statistics of Study Variables

**Table 4:** Means, Standard Deviations, and Range of Study Variables

| Variable                | Min | Max | Mean  | SD    |
|-------------------------|-----|-----|-------|-------|
| Social Media Usage      | 23  | 115 | 71.45 | 15.32 |
| Authoritative Parenting | 8   | 40  | 28.12 | 6.45  |
| Authoritarian Parenting | 8   | 40  | 24.67 | 7.12  |
| Permissive Parenting    | 8   | 40  | 22.34 | 6.89  |
| Neglectful Parenting    | 8   | 40  | 18.56 | 7.34  |
| Deviant Behaviours      | 25  | 125 | 52.18 | 18.45 |

Table 4 presents the descriptive statistics for the major study variables. Social media usage scores ranged from 23 to 115, with a mean of 71.45 (SD = 15.32), indicating moderate-to-high levels of social media engagement among respondents. For parenting styles, the highest mean score was observed for authoritative parenting (M = 28.12, SD = 6.45), followed by authoritarian (M = 24.67, SD = 7.12), permissive (M = 22.34, SD = 6.89), and neglectful parenting (M = 18.56, SD = 7.34). Deviant behaviour scores ranged from 25 to 125, with a mean of 52.18 (SD = 18.45), suggesting moderate levels of deviant behaviour in the sample.

Prior to conducting the regression analyses, the assumptions underlying linear regression were examined. Normality was assessed through skewness and kurtosis values, which fell within acceptable ranges ( $\pm 2$ ) for all variables. Visual inspection of histograms and P-P plots indicated approximately normal distributions. Linearity was confirmed through scatterplots of the relationships between each predictor variable and deviant behaviours, which demonstrated linear patterns. Homoscedasticity was verified through inspection of residual scatterplots, which showed consistent variance across levels of the predictors. For the multiple regression model, multicollinearity was assessed using Variance Inflation Factor (VIF) and tolerance values. The VIF values were 1.23 for social media usage and 1.18 for parenting styles, both well below the threshold of 10, indicating no problematic multicollinearity. Tolerance values were 0.81 and 0.85, respectively, further confirming the absence of multicollinearity. The Durbin-Watson statistic was 1.87, falling within the acceptable range of 1.5 to 2.5, indicating no significant autocorrelation of residuals. These results confirmed that the data met the assumptions required for valid regression analysis.

## Test of Hypotheses

**Hypothesis One:** Social media use does not significantly predict deviant behaviours among adolescents in secondary schools within Kaduna Metropolis.

**Table 5:** Simple Linear Regression Analysis of Social Media Use on Deviant Behaviours

| Model            | B   | SE  | $\beta$ | t    | p      | R    | R <sup>2</sup> | Adj. R <sup>2</sup> | F     |
|------------------|-----|-----|---------|------|--------|------|----------------|---------------------|-------|
| (Constant)       | —   | —   | —       | —    | —      | .311 | .097           | .095                | 42.51 |
| Social Media Use | .75 | .11 | .31     | 6.52 | < .001 |      |                |                     |       |

*Dependent Variable: Deviant Behaviours; df = (1, 398); p < .001*

Table 5 shows the result of the simple linear regression analysis conducted to test hypothesis one. Social media use significantly and positively predicted deviant behaviours,  $t(398) = 6.52$ ,  $p < .001$ . The model was statistically significant,  $F(1, 398) = 42.51$ ,  $p < .001$ , with  $R^2 = .097$ , indicating that social media use explained approximately 9.7% of the variance in deviant behaviours. The positive regression coefficient ( $\beta = .31$ ) indicates that higher social media use scores were associated with higher deviant behaviour scores. Therefore, the null hypothesis was rejected.

## Hypothesis Two

**H02:** Parenting styles do not significantly predict deviant behaviours among adolescents in secondary schools within Kaduna Metropolis.

**Table 6:** Simple Linear Regression Analysis of Parenting Styles Composite on Deviant Behaviours

| Model                      | B    | SE  | $\beta$ | t     | p      | R    | R <sup>2</sup> | Adj. R <sup>2</sup> | F     |
|----------------------------|------|-----|---------|-------|--------|------|----------------|---------------------|-------|
| (Constant)                 | —    | —   | —       | —     | —      | .282 | .079           | .077                | 33.99 |
| Parenting Styles Composite | -.48 | .08 | -.28    | -5.83 | < .001 |      |                |                     |       |

*Dependent Variable: Deviant Behaviours; df = (1, 398); p < .001*

Table 6 presents the result of the simple linear regression analysis using the exploratory parenting styles composite score. The composite significantly and negatively predicted deviant behaviours,  $t(398) = -5.83$ ,  $p < .001$ . The model was statistically significant,  $F(1, 398) = 33.99$ ,  $p < .001$ , with  $R^2 = .079$ , indicating that the parenting styles composite explained approximately 7.9% of the variance in deviant behaviours. The negative regression coefficient ( $\beta = -.28$ ) indicates that higher scores on the composite, representing predominantly authoritative parenting, were associated with lower deviant behaviour scores. Therefore, the null hypothesis was rejected.

Separate exploratory analyses of the four parenting dimensions indicated that authoritative parenting was negatively associated with deviant behaviours, whereas authoritarian, permissive and neglectful parenting were positively associated with deviant behaviours. These analyses are interpreted as supplementary evidence because the four parenting dimensions represent distinct constructs and should not be treated as interchangeable components of a single validated composite without appropriate psychometric justification.

## Hypothesis Three

**H03:** Social media use and parenting styles do not jointly significantly predict deviant behaviours among adolescents in secondary schools within Kaduna Metropolis.

**Table 7:** Multiple Linear Regression Analysis of Social Media Use and Parenting Styles on Deviant Behaviours

| Predictor                  | B    | SE  | $\beta$ | t     | p      | VIF  | Tolerance |
|----------------------------|------|-----|---------|-------|--------|------|-----------|
| Social Media Use           | .58  | .11 | .24     | 5.21  | < .001 | 1.23 | .81       |
| Parenting Styles Composite | -.36 | .08 | -.21    | -4.68 | < .001 | 1.18 | .85       |

*Model Summary:*  $R = .819$ ,  $R^2 = .670$ ,  $Adj. R^2 = .668$ ,  $F(2, 397) = 403.02$ ,  $p < .001$ ,  $Durbin-Watson = 1.87$

*Dependent Variable: Deviant Behaviours*

Table 7 displays the result of the multiple linear regression analysis conducted to test hypothesis three. The combined model was statistically significant,  $F(2, 397) = 403.02$ ,  $p < .001$ ,  $R = .819$ ,  $R^2 = .670$ , indicating that social media use and parenting styles jointly accounted for approximately 67.0% of the variance in deviant behaviours. Both predictors retained significant independent contributions: social media use ( $\beta = .24$ ,  $t = 5.21$ ,  $p < .001$ ) and parenting styles composite ( $\beta = -.21$ ,  $t = -4.68$ ,  $p < .001$ ). Therefore, the null hypothesis was rejected.

### Exploratory Moderation Analysis

**Table 8:** Hierarchical Regression Analysis Testing Moderation of Parenting Styles on the Relationship between Social Media Use and Deviant Behaviours

| Step   | Predictor                                   | B    | SE  | $\beta$ | t     | p      | $R^2$ | $\Delta R^2$ | $\Delta F$ |
|--------|---------------------------------------------|------|-----|---------|-------|--------|-------|--------------|------------|
| Step 1 | (Constant)                                  | —    | —   | —       | —     | —      | .670  | —            | —          |
|        | Social Media Use                            | .58  | .11 | .24     | 5.21  | < .001 |       |              |            |
|        | Parenting Styles Composite                  | -.36 | .08 | -.21    | -4.68 | < .001 |       |              |            |
| Step 2 | (Constant)                                  | —    | —   | —       | —     | —      | .680  | .01          | 1.24       |
|        | Social Media Use                            | .57  | .11 | .23     | 5.14  | < .001 |       |              |            |
|        | Parenting Styles Composite                  | -.35 | .08 | -.21    | -4.59 | < .001 |       |              |            |
|        | Social Media $\times$ Parenting Interaction | -.04 | .04 | -.05    | -1.11 | .27    |       |              |            |

*Dependent Variable: Deviant Behaviours; Step 1:  $df = (2, 397)$ ; Step 2:  $df = (1, 396)$*

An exploratory hierarchical regression analysis was conducted to determine whether parenting styles moderated the relationship between social media use and deviant behaviours. The continuous predictor variables were centred before the interaction term was computed. In Step 1, social media use and parenting styles were entered and jointly explained 67.0% of the variance in deviant behaviours,  $F(2, 397) = 403.02$ ,  $p < .001$ . In Step 2, the interaction term was added. The addition of the interaction term did not produce a statistically significant improvement in the model,  $\Delta R^2 = .01$ ,  $\Delta F(1, 396) = 1.24$ ,  $p = .27$ . The non-significant interaction indicates that there was insufficient statistical evidence that parenting styles moderated the relationship between social media use and deviant behaviours in the present sample. The results therefore support an interpretation in which social media use and parenting styles contributed independently to the prediction of deviant behaviours rather than demonstrating a statistically significant interaction effect.

## Discussion of Findings

The findings of the study provide evidence that social media use and parenting styles were statistically associated with deviant behaviours among adolescents in secondary schools within Kaduna Metropolis. However, because the study employed a cross-sectional survey design, the findings should be interpreted in terms of statistical prediction and association rather than causal effects.

The first finding showed that social media use was a statistically significant positive predictor of deviant behaviours,  $t(398) = 6.52, p < .001$ . The regression model was significant,  $F(1, 398) = 42.51, p < .001$ , with social media use accounting for approximately 9.7% of the variance in deviant behaviour scores. The finding suggests that adolescents reporting greater social media use also tended to report higher levels of deviant behaviour. This association may be understood within the framework of Bandura's Social Learning Theory, which proposes that behaviour can be acquired through observing and interacting with social models. Social media provides adolescents with extensive exposure to peers, influencers and other social actors whose behaviours, attitudes and norms may be observed, evaluated and potentially imitated. Nevertheless, the magnitude of the explained variance should be interpreted carefully. Social media use accounted for 9.7% of the variance. This indicates that although social media use was a statistically significant predictor in the present sample, a substantial proportion of individual differences in deviant behaviours remained unexplained by this variable. Other factors, including peer relationships, school climate, family circumstances, socioeconomic conditions, personality characteristics and exposure to violence, may also contribute to adolescent deviant behaviours. The finding is therefore better interpreted as evidence of a meaningful statistical association rather than evidence that social media use causes deviant behaviour. The cross-sectional design does not establish whether greater social media use precedes deviant behaviour or whether adolescents who already display deviant tendencies subsequently engage more heavily with social media.

The second finding indicated that the parenting styles composite was a statistically significant negative predictor of deviant behaviours,  $t(398) = -5.83, p < .001$ . The regression model was significant,  $F(1, 398) = 33.99, p < .001$ , with the composite accounting for approximately 7.9% of the variance in deviant behaviours. The negative direction suggests that higher scores on the composite measure were associated with lower levels of deviant behaviour. The supplementary analyses further indicated that authoritative parenting was negatively associated with deviant behaviours, whereas authoritarian, permissive and neglectful parenting were positively associated with deviant behaviours. This pattern is broadly consistent with the theoretical expectation that parenting characterised by appropriate monitoring, warmth, responsiveness and clear behavioural expectations may be associated with more adaptive adolescent outcomes. In contrast, parenting characterised by excessive harshness, inadequate supervision or limited parental involvement may be associated with greater vulnerability to problematic behaviour. The comparatively weaker association observed for some parenting dimensions should nevertheless be interpreted with caution. Parenting is a multidimensional construct, and adolescents

may experience or interpret parental behaviours differently. In addition, cultural expectations concerning parental authority, discipline, obedience and family relationships may influence how parenting practices relate to adolescent behaviour. Consequently, the relationship between parenting and adolescent deviance should not be interpreted solely through a universal parent-child framework without considering the social and cultural context of Kaduna Metropolis. The use of a composite parenting index also warrants caution. Because authoritative, authoritarian, permissive and neglectful parenting represent conceptually distinct dimensions, combining them into a single score may obscure differences between parenting patterns. The separate analyses therefore provide useful supplementary information and should be given appropriate attention in interpreting the findings.

The third finding showed that social media use and parenting styles jointly significantly predicted deviant behaviours. The multiple regression model was statistically significant,  $F(2, 397) = 403.02$ ,  $p < .001$ , with  $R = .819$  and  $R^2 = .670$ . The two predictors jointly accounted for approximately 67.0% of the variance in deviant behaviours. When the predictors were considered simultaneously, social media use retained a positive contribution to the prediction of deviant behaviours, whereas parenting styles retained a negative contribution. This indicates that the two variables contributed independently to the prediction of adolescent deviant behaviours in the present sample. The joint model should not, however, be interpreted as demonstrating that the variables caused deviant behaviour. The relatively high proportion of explained variance also requires careful consideration because regression estimates can be influenced by measurement characteristics, shared method variance and the way variables are operationalised. Further research using longitudinal designs and multiple sources of information would be necessary to establish temporal relationships among social media use, parenting practices and adolescent deviant behaviours.

The exploratory moderation analysis did not provide evidence that parenting styles significantly moderated the relationship between social media use and deviant behaviours. Although the interaction term produced a small increase in explained variance, the improvement was not statistically significant,  $\Delta R^2 = .01$ ,  $\Delta F(1, 396) = 1.24$ ,  $p = .27$ . This finding means that the statistical relationship between social media use and deviant behaviours did not differ significantly across levels of the parenting styles composite in the present sample. In other words, the study did not find sufficient evidence to conclude that parenting styles either strengthened or weakened the relationship between social media use and deviant behaviours.

The non-significant moderation finding is important because the theoretical framework initially suggested that parenting could condition the relationship between adolescents' social media use and deviant behaviour. The evidence instead suggests that, within this sample, social media use and parenting styles may operate as relatively independent predictors rather than through a statistically significant interaction. Several explanations are possible. First, the influence of parenting may operate through mechanisms other than moderation, such as direct behavioural regulation, parental monitoring

or the development of emotional and social competencies. Second, adolescents' peer environments and online social networks may exert influences that are not adequately captured by the parenting measure. Third, the cross-sectional design and reliance on adolescent self-reports may have limited the ability to detect more complex relationships. The finding therefore does not mean that parenting is unimportant. Rather, it indicates that the present data did not provide statistically significant evidence for a moderating effect.

Taken together, the findings indicate that social media use and parenting styles were significant statistical predictors of adolescent deviant behaviours in Kaduna Metropolis. Social media use demonstrated a positive association, while the parenting styles composite demonstrated a negative association. When considered jointly, the predictors explained a substantial proportion of variance in deviant behaviour scores. However, the exploratory moderation analysis did not demonstrate a statistically significant interaction between the two variables. The findings support the relevance of both the social learning perspective and parenting-style perspective to understanding adolescent deviant behaviour. At the same time, the results suggest that adolescent deviance is unlikely to be adequately explained by a single factor. Interventions should therefore consider the wider social, familial, school and digital environments in which adolescents develop and interact. Given the cross-sectional nature of the study, these findings should be understood as evidence of statistical associations and predictive relationships rather than causal effects.

## **Conclusion**

This study examined social media usage and parenting styles as predictors of deviant behaviours among secondary school adolescents in Kaduna Metropolis. Social media use was a statistically significant positive predictor, accounting for approximately 9.7% of the variance in deviant behaviours. Parenting styles were a statistically significant negative predictor, explaining approximately 7.9% of the variance, with authoritative parenting associated with lower deviance and authoritarian, permissive, and neglectful parenting associated with higher deviance. The combined model accounted for approximately 67.0% of the variance, exceeding either variable alone. The absence of a significant interaction effect indicated additive rather than multiplicative combined effects.

Both social media usage and parenting styles are significant statistical predictors of adolescent deviant behaviour in Kaduna Metropolis. Intensive, unsupervised social media engagement is associated with higher levels of truancy, cyberbullying, substance use, and academic dishonesty. Authoritative parenting is associated with lower deviance, while neglectful and permissive parenting are associated with higher deviance. The combined influence of these factors provides stronger prediction than either alone, indicating that effective interventions must address both digital environments and family functioning. The study concludes that adolescent deviance is associated with the combined influence of digital and familial socialising forces, requiring comprehensive approaches that strengthen parenting practices while equipping families with digital navigation skills.

## Recommendations

Based on the findings, the following recommendations are made:

- i. Parents should actively monitor adolescents' social media use through open communication and discussion of online risks rather than restrictive surveillance alone.
- ii. Parents should adopt authoritative parenting practices that balance emotional warmth with clear expectations and consistent discipline.
- iii. Parents should avoid neglectful and permissive approaches, maintaining involvement and boundaries despite economic pressures and time constraints.
- iv. Schools should integrate digital citizenship education into curricula, teaching students to critically evaluate online content and resist negative peer influence.
- v. Schools should strengthen guidance and counselling services for students exhibiting deviant behaviours.
- vi. Collaborative parent-school-community partnerships should provide consistent guidance across digital and offline environments.
- vii. The Kaduna State Ministry of Education should organise awareness campaigns on unregulated social media dangers and effective digital-age parenting.
- viii. Policymakers should develop frameworks addressing adolescent digital safety, including age-appropriate content standards and parental digital literacy programmes.

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