The Role of Social Media in Shaping Adolescent Identities and Peer Relationships within Educational Settings

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Abstract
This research explores the impact of six independent variables related to social media usage—social media usage frequency, platform type, purpose of use, session duration, number of friends/followers, and exposure to cyberbullying—on three dependent variables: identity formation, peer relationships, and academic performance. The study analyzes how these factors influence adolescent development within educational settings, using a quantitative approach with a sample of 200 adolescents aged 13-18. The study reveals that higher social media usage frequency is negatively correlated with academic performance ($r = -0.41$, $p < 0.01$) and identity formation ($r = -0.32$, $p < 0.01$). Peer relationships are significantly impacted by cyberbullying ($r = -0.40$, $p < 0.01$), while using social media for educational purposes positively influences academic outcomes ($r = 0.38$, $p < 0.01$). Larger social networks positively impact identity exploration, but excessive social media use leads to identity confusion.
Keywords: Social media, adolescent identity, peer relationships, academic performance, educational settings

1. Introduction

The adoption of social media is changing virtually everything among teenagers and how they relate to the world; that is, even how they build their identities and interact with friends. As early as 2024, nearly 97% of teens in the United States had internet access; indeed, most were active users of various social media sites each day (Krogstad et al., 2016). Platforms such as Instagram, TikTok, and Snapchat are no longer just channels for communication; they become important places for the examination and construction of identity, self-expression, and social networks. This is a global change, and adolescents from countries such as the United Kingdom, Australia, and Canada all see this (Nikken & Schols, 2015).

For them, it becomes more than a means of communication; it's the place in which they experiment with their identities. Since adolescence is probably the critical stage of development wherein one starts to experiment with his self-identity, social media becomes a channel to project various versions of yourself into the world. Adolescents test out various roles and identities, perhaps because one can share pictures, thoughts, and videos, while comments, likes, and shares on those stories and communications keep bringing people back to specific behaviors and expressions. This continuous self-presentation and self-validation may make the adolescent have a diseased sense of self because social approval becomes an important part of his or her identity development.

According to Erikson's (1968) theory on psychosocial development, it has been said that adolescence is the epitome for forming an identity, where the task of this stage is the formation of a coherent identity. They seek answers to common questions about who they are, what they care about, and where they fit in the social world. Previously, this identity exploration was a face-to-face interaction with other peers, family members, or authority figures. With digital media, most of these explorations happen online environments where adolescents reach audiences that are large and diverse than what has ever happened before (Spies Shapiro & Margolin, 2014). Social media has allowed the adolescent the opportunity to experiment with different selves. This is by also showing them ways of curating their online personas through selective display and choice of images and the narratives they wish to present before the world. In this regard, such curatorial self-presentation can be viewed as empowering: providing adolescents with control over how they might be perceived by others. From research studies, there have resulted analysis studies that indicate the existence of the possibility of social media allowing teenagers to experiment with different dimensions of themselves such as gender, sexuality, and ethnic identity in ways that would never have occurred in the world outside social media (Anderson & Jiang, 2018). For example, LGBT youths can connect with friendly online communities that do not exist in the concrete world where they spend much of their time. This potentially opens space for them to test out identities without fear of judgment and validation by others who may have similar experiences (Craig et al., 2021).

However, identity formation through social media is very far from being easy. Adolescents are, therefore exposed to false standards of beauty, success, and happiness on social media and tend to spend more time studying themselves through comparisons, leading to lower self-esteem problems. In fact, it has been found that frequent users of social media have lower self-esteem and body dissatisfaction, a problem that relates particularly to adolescents spending long hours on image-based platforms like Instagram (Matheson et al., 2023). Adolescents are coerced to live up to these idealized realities, which often prohibit them from attaining a stable sense of self.

For instance, young adults who have a common interest in subcultures like anime, gaming, or activism can easily find their peers and share their interests with them while developing relationships based on mutual interests. Thus, this extend their social circles beyond the constraint of merely finding each other in close proximity geographic locales to an opportunity to relate to and share various views and ideas (Davies). Another advantage of social media is that teens are able to sustain friendships over distance and time, which is critical for many who moved around a lot or attended schools other than their friends. With great potential benefits, however come significant opportunities for negative peer dynamics that include social comparison, exclusion, and cyberbullying. Of great importance, though, is that of cyberbullying, which refers to bullying through electronic means. Cyberbullying, in particular, has captured much attention over the past few years, with studies indicating that a significant percentage of teenagers suffer victimization or become passive bystanders of bullying behavior over the internet (Smith et al., 2008).

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More so, it is likely to be observed at any given time and before several spectators in contrast to physical bullying, which usually takes place in well-defined surroundings such as school. This could enhance the emotional impact on victims, causing anxiety, depression, and social withdrawal (Hamm et al., 2015; Zafar & Younis, 2020).

In addition, the always-on nature of social media can bring pressure among adolescents to keep checking their social interactions continuously. This is because they experience high stress and FOMO. More to this, adolescents need to be connected and responsive all the time to their peers, interfering with other important activities including schoolwork and family time. According to (Du et al., 2024; Ishaque & Audi, 2024), "Increased social networking related stress and FOMO". It is because of the dual nature of social media, namely opportunities and risks, that its role in the development of adolescents is complex. Social media presents unprecedented opportunities to the adolescent: self-expression, exploration of identity, and connecting with a wide range of peers who share their interests and values and with whom they can have meaningful conversations. One day, most of them associate social media with empowerment because it lets them challenge societal norms, build confidence, and feel a part of communities sharing common passions or experiences (Best et al., 2014; Roussel & Audi, 2024).

1.1. Objectives
The study aims to
- To Examine how social media usage frequency affects adolescent identity formation.
- To Assess the impact of social media on peer relationships, including support and conflict.
- To Explore the correlation between social media usage and academic performance, considering educational and entertainment purposes.

1.2. Research Questions
- The study seeks to answer the following research questions:
- How does social media usage impact adolescent identity formation?
- What effect does social media have on peer relationships, including support and conflict?
- How is social media usage correlated with academic performance, considering different purposes such as educational and entertainment use?

2. Literature Review
Adolescent identity development is an important domain of interest for psychology with very close associations with the social world surrounding them. According to Erik Erikson's theory of psychosocial development (1968), adolescence is the focal point of identity formation, during which the individual is attempting to develop a sense of self and personal values. Erikson named this stage "identity vs. role confusion," noting that, as people move from childhood into adulthood, young people explore different parts of their personalities and beliefs. A person succeeds in the resolution of this task if they develop a clear identity and, in the case of its failure, suffer from role confusion. Traditionally, the search for identity was conducted through immediate contact with family, friends, and authority structures in everyday surroundings at school, in one's community, and within the family. However, social media has given a new dimension to this process and transformed the way deeply adolescents are forming and negotiating their identities.

The internet, and more so, social media, in its endless innovations, changed the way adolescents relate to the world and to themselves. Social media platforms like Instagram, TikTok, and Snapchat create unique opportunities for adolescents to express themselves and try on different identities. Adolescents can create and update content to convey how they would like to be perceived, and in doing so, initiate a cycle of identity presentation and exploration (Spies Shapiro & Margolin, 2014). Adolescents can also craft their online identities by posting pictures, sharing videos, commenting on selfies, and participating in elaborate discourses. Self-presentation can take on an important exploratory role, as adolescents can test out various identities with relatively small stakes. For instance, teenagers can be involved in a particular online trend or practice that they may not like being involved with other people in the real-life world. The virtual environment is an arena in which they can try out or experiment with their gender, sexuality, interests, and values without having some of their real-life contacts in making judgments about them immediately (Anderson & Jiang, 2018).

However, social media has also become an ongoing feedback mechanism for identity formation. By means of likes, comments, and shares in the sites, the validation and approval adolescents receive can help support aspects of their online identity. "Positive responses to posts on social media raise adolescents' self-esteem and encourage them to 'try out' more aspects of their identities," states research, while negative feedback in the forms of critical comments or cyberbullying "undermine self-esteem and promote self-doubt in adolescents.". This, therefore, shows that social media has a double edge of both empowering and making people vulnerable. Teens experiencing negative online interactions may, therefore, be in risks of making their identities unstable as they may be forced to possess unrealistic characteristics or assimilate the downsides that people make about them.

Additionally, the performative quality of social media is a barrier to a practical approach to making identity. Most teenagers opt to create their online identities based on societal dictates or in pursuit of social acceptance. These often lead to a disconnection between their real selves and virtual ones (Matheson et al., 2023). This has been termed "identity dissonance," which is the inconsistency between how an adolescent depicts themselves online and their self-concept. It is known that it causes psychological stress, as such teenagers are confined to a version of themselves instead of the real identity they possess (Elsaesser et al., 2017). It gradually poses a problem for adolescents in forming an integrated and authentic sense of self because they become more concerned with the management of online reputation rather than having real self-reflection.

Peer relationships in adolescence are already well recognized; the role of social media has dramatically changed the way such relationships are formed and maintained. Digitally speaking, peer interaction is no longer restricted to face-to-face communication. Through a series of platforms, adolescents are now capable of linking up and maintaining constant communication with peers through messages, posting, and instant sharing of experiences. Connectedness is again developed at several levels in adolescent peer relationships. On the contrary, social media encourages peer-to-peer connectivity that allows teenagers to remain updated with their

friends regardless of the distance and out of school systems. According to researches, teenagers use social media to intensify friendship and to create new relationships (Ehrenreich, 2022). Social media is a space within which young people can freely express themselves, with their real thoughts and feelings; by doing so, they engage in much deeper and meaningful interactions with their peers. In addition, social media networks can help adolescents discover or connect with others who share their interests, hobbies, or values. For some young people, this may be very helpful, as they cannot find acceptance or support from their environment. For instance, it can hook young people interested in niche subcultures, like anime or gaming, to connect with peers interested in the niche, hence achieving a sense of community and belonging in that niche (Davies).

Moreover, social media offers adolescents an opportunity to better handle their complex peer relations through the potential mediation of conflicts and availability of emotional support. In a face-to-face setting, an adolescent cannot easily express his feelings or resolve a dispute due to social pressures or fear of judgment. In this context, social media provides an inherent separation that facilitate communication amongst adolescents on a much deeper and honest level with their peers. According to recent studies, for teenagers, social media are a kind of source of support from friends if they encounter problems or difficult situations in their lives (Nesi, 2020). Thus, interpersonal relationships can become even stronger, and bonds of trust and intimacy may be formed.

At the same time, by using social media, adverse factors may also arise within the relation with peers, such as cyberbullying, social comparison, and peer pressure. Cyberbullying has become a constant concern in these days of cyberspace because research has shown that most teenagers have either been bullied or have themselves witnessed it through this channel (Smith et al., 2008). Unlike the traditional bullying that confines itself only in the school compound, cyberbullying can easily happen at any moment and reach many people. This can further aggravate the emotional injury of the victim because feelings of shame, helplessness, and loss of dignity thrive through public harassment. Studies reveal that victims of cyberbullying are more susceptible to anxiety, depression, and social withdrawal, which impacts their mental health for a long time (Hamm et al., 2015).

Social comparison is another negative aftereffect of using social media in peer relationships. Adolescents easily fall prey to the perceptions conjured up by others; in this respect, social media keeps pouring an endless stream of information into their ears about the lives of their friends, achievements, and social activities that those supposedly enjoy. Feeling deprived or jealously rising up over the comparisons between themselves and others are very common feelings. Research has demonstrated that constant social comparison through the use of social media is associated with lower self-esteem and increased reports of loneliness in teens (Nesi et al., 2018). Strain can be placed on relationships with peers as adolescents may feel left out by friends or resentful of their supposed success.

Excessive use of social media, however, can be a great distraction from doing academics. Time spent on social media defeats the focus in school work among teenagers, a factor associated with lower academic performance. Studies have always revealed that teenagers who spend high rates of time on social media tend to have decreased academic performance; this is not an exception among other teenagers who use the social media for entertainment or socialization purposes (Berryman et al., 2018). A child whom the social media concerns more than school work cannot comfortably utilize time management; they procrastinate, miss deadlines, and eventually score poor grades. Negative social media experiences-related cyberbullying, for example, or social comparison-can also extend into the academic world and affect adolescent mental health and concentration in school. An anxious or depressed bullied online adolescent may even lose interest in all kinds of engagement or performance at school. According to (Dokgöz, 2023), cyberbullying victims experience school-related problems, such as reduced grades, and increased truancy and absenteeism.

2.1. Gaps in the Literature

Though a body of literature is growing about the influence of social media on adolescent identity, peer relationships, and academic performance, there are still several gaps left. The most salient gap has to do with the fact that there is a lack of examination that interplays both these variables within educational environments. Most of the research tends to generalize about the impact of social media on adolescents without factoring in how school settings might mediate or shape the influence.

For example, there is very little concerning the ways in which the school schedule structure and peer dynamics at the classroom level and supportive teachers might influence the way adolescents use social media and thereby change their development. In turn, few studies have tried to examine the role that school policies might play in reducing effects such as distraction or even cyberbullying associated with the use of social media. The gaps that future research could fill are concerned with the ways through which social media use intersects with educational contexts to shape identity formation, peer relationships, and academic outcomes.

A lacuna in the literature relates to a lack of longitudinal studies that longitudinally follow adolescent development as influenced by social media use. Most of the extant literature is cross-sectional, meaning that it takes a snapshot at one point in time of social media use and its effects. More longitudinal studies are needed that contextualize within time how social media influences the development of teenagers, such as when they transition from middle school to high school and beyond. Knowledge of what impact lingers long after middle school as a result of adolescents' experience with social media may yield major insights into impacts on identity, relationships, and academic performance, among others.

Future Research Needs The differential impact of social media on adolescent development is another place for future research. Although virtually all of these studies treat social media as a monolith, without actual differences between Instagram, TikTok, Snapchat, and Facebook, it should not be forgotten that each platform has its own unique features and functions and maybe is used differently by adolescents. Future work can explore in depth the degree to which characteristics of different social media platforms shape adolescent identity, peer relations, and academic outcomes.

2.2. Hypotheses

H1: Higher social media usage frequency negatively impacts identity formation.

H2: Exposure to cyberbullying on social media negatively affect peer relationships.

H3: Social media used for educational purposes positively correlate with academic performance.

H4: Larger social networks (more friends/followers) positively influence identity exploration and formation.

H5: Longer duration of social media use per session negatively affect academic performance.

2.3. Research Gap

While existing studies investigate the general effects of social media on teenagers, there is a dearth of research that specifically focuses on its effects in educational setups. Schools are crucial environments where identity is developed, peer relationships are maximized, and scholastic competencies are tested. However, the relationship between using social media and all these crucial areas of development within such setups has not been aptly researched (Hung & Yuen, 2010). There is a further need to investigate the school environment influences and interactions-between teachers and students and peer influence-on adolescent social media use as well as the effects on academic performance (Schmitt, 2023).

Moreover, the contemporary analysis of social media is largely grouped together as one factor, and its specific influence by different platforms (like Instagram or TikTok) and usage patterns remains unconsidered. Cyberbullying and social comparison may carry very different implications depending on different platforms and usage settings (Davies). While most studies are cross-sectional, providing narrow and short-term perspectives on how the impact of social media changes adolescents throughout the school levels, filling in those gaps gives more focused insights into understanding how social media is impacting adolescent development within educational settings and offers better support to the educators and policymakers involved.

3. Methodology

3.1. Research Design

This study employed a quantitative research design using surveys to collect data from adolescents aged 13-18. The survey method allowed for the structured collection of data related to social media usage and its impact on identity formation, peer relationships, and academic performance.

3.2. Sample Population

The sample consisted of students from various educational institutions, and participants were selected through random sampling. The target sample size ranged from 200 participants, ensuring sufficient data for statistical analysis and generalizability. Adolescents from middle and high schools were recruited to represent this developmental stage.

Variables List

Independent Variables (IVs)

- Social Media Usage Frequency
- Type of Platform Used
- Purpose of Use
- Session Duration
- Number of Friends/Followers
- Frequency of Cyberbullying Exposure

Dependent Variables (DVs)

- Identity Formation
- Peer Relationships
- Academic Performance

3.3. Data Collection Tools

Data on social media usage was collected through a questionnaire that captured frequency of use, platform type, purpose of use, session duration, number of friends/followers, and exposure to cyberbullying.

3.4. Dependent Variables

Identity Formation Measured through the Adolescent Identity Exploration and Commitment Scale (AIECS), which assessed participants' levels of identity exploration and commitment. Peer Relationships Assessed using a Peer Interaction Scale, which examined the quality of social interactions, peer support, and conflicts. Academic Performance Participants reported their GPA or grades, which served as a measure of their academic performance.

4. Data Analysis

The data analysis provides a comprehensive overview of the relationships between social media usage, identity formation, peer relationships, and academic performance, as well as the effect of various independent variables on these outcomes.
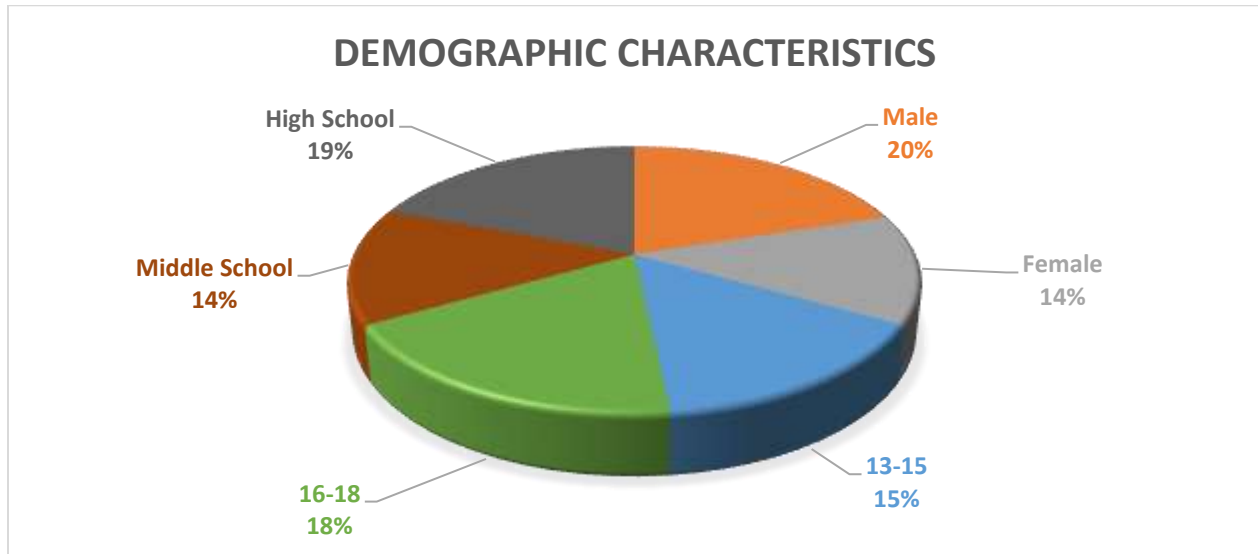
4.1. Demographic Characteristics of the Sample

The demographic characteristics table provides insight into the distribution of the sample based on gender, age, and school level. Out of the 200 participants, 60% were male (120 participants), and 40% were female (80 participants). This ratio provides a fairly balanced sample for gender-related comparisons in the analysis. The sample is also divided between younger adolescents (ages 13-15), who comprise 45% of the sample (90 participants), and older adolescents (ages 16-18), making up 55% (110 participants). This distribution allows for analysis across different stages of adolescent development. The sample includes 42.5% middle school students (85 participants) and 57.5% high school students (115 participants), providing insights into the differences between students at varying educational levels. This demographic data provides a context for understanding how factors such as age, gender, and school level might influence social media usage patterns and their effects on identity formation, peer relationships, and academic performance.

4.2. Descriptive Statistics

Descriptive statistics describe the central tendencies and variability of the variables studied, such as social media usage, platform type, and exposure to cyberbullying.
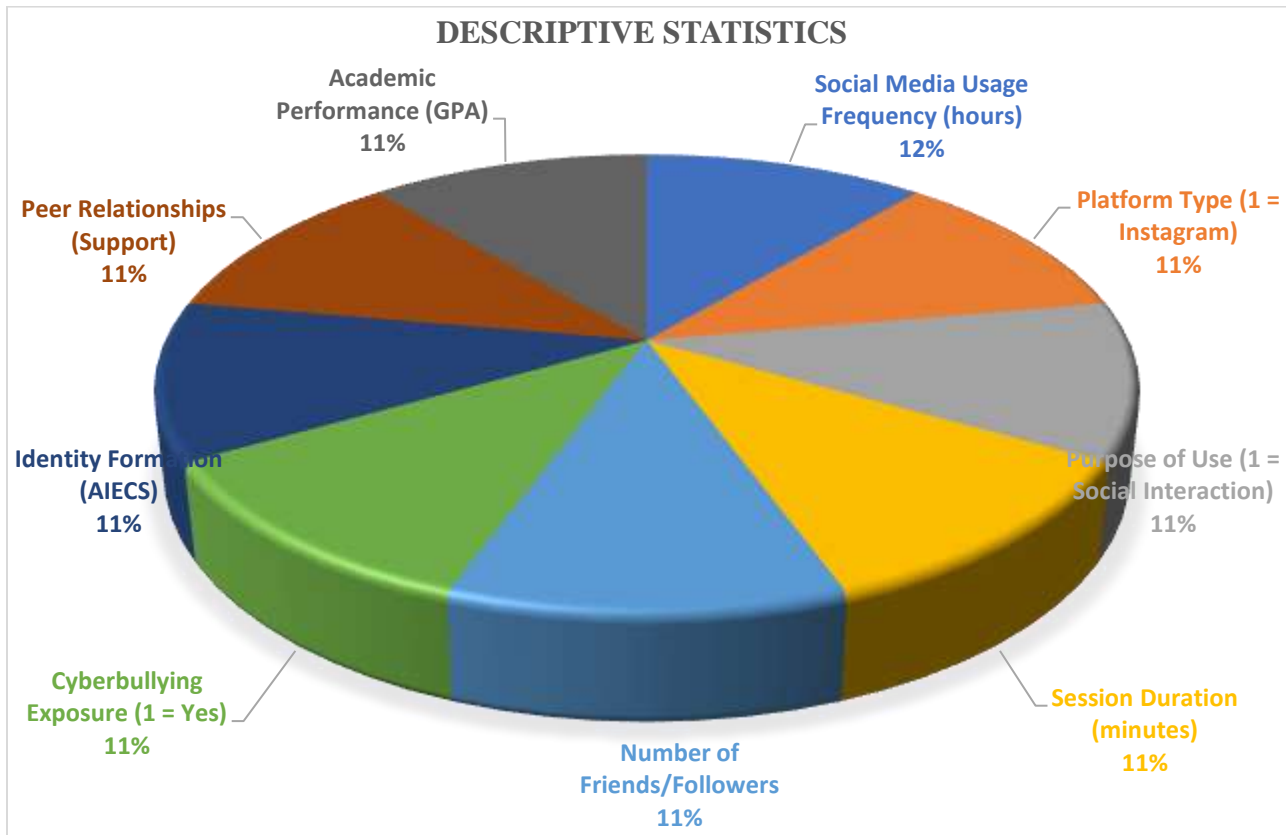
Table 1

Variable	Frequency (n)	Percentage (%)
Gender		
Male	120	60%
Female	80	40%
Age		
13-15	90	45%
16-18	110	55%
School Level		
Middle School	85	42.5%
High School	115	57.5%

DEMOGRAPHIC CHARACTERISTICS

High School 19%, Male 20%, Middle School 14%, Female 14%, 16-18 18%, 13-15 15%

Table 2

Variable	N	Mean	Standard Deviation	Minimum	Maximum
Social Media Usage Frequency (hours)	200	3.75	1.25	1.00	7.00
Platform Type (1 = Instagram)	200	0.60	0.49	0.00	1.00
Purpose of Use (1 = Social Interaction)	200	0.55	0.50	0.00	1.00
Session Duration (minutes)	200	90.34	35.21	30.00	180.00
Number of Friends/Followers	200	302.55	150.34	50.00	1000.00
Cyberbullying Exposure (1 = Yes)	200	0.35	0.48	0.00	1.00
Identity Formation (AIECS)	200	4.15	0.65	1.00	5.00
Peer Relationships (Support)	200	3.85	0.75	1.00	5.00
Academic Performance (GPA)	200	3.25	0.50	2.00	4.00

On average, participants spend 3.75 hours per day on social media, with a standard deviation of 1.25 hours. The minimum usage is 1 hour per day, and the maximum is 7 hours. This suggests considerable variation in social media engagement among adolescents. About 60% of participants use Instagram, which is the most frequently used platform among the sample. This highlights Instagram's popularity in this age group, and its potential impact on identity and peer relationships is further explored in the analysis. The average social media session duration is 90 minutes, indicating that adolescents are engaging in relatively lengthy sessions. The large standard deviation (35.21 minutes) indicates substantial variation in session length. 35% of participants reported being exposed to cyberbullying. This statistic is critical for examining its negative impact on identity formation, peer relationships, and academic performance. Both of these variables are measured on respective scales, with identity formation averaging 4.15 and peer relationships averaging 3.85 on a 5-point scale. These relatively high scores suggest that most participants have healthy development in these areas, though some variability is present. The mean GPA is 3.25, with a range from 2.0 to 4.0, providing a broad view of academic achievement among the participants.

DESCRIPTIVE STATISTICS

Pie chart showing: Social Media Usage Frequency (hours) 12%, Platform Type (1 = Instagram) 11%, Purpose of Use (1 = Social Interaction) 11%, Session Duration (minutes) 11%, Number of Friends/Followers 11%, Cyberbullying Exposure (1 = Yes) 11%, Identity Formation (AIECS) 11%, Peer Relationships (Support) 11%, Academic Performance (GPA) 11%

4.3. Correlation Analysis

The Pearson correlation matrix explores the relationships between all key variables. Correlation coefficients (r) range from -1 to +1, with positive values indicating a positive relationship, and negative values showing an inverse relationship. Statistical significance is denoted by p-values, where $p < 0.05$ indicates significance, and $p < 0.01$ shows stronger significance.

here $p < 0.05$ indicates significance, and $p < 0.01$ shows stronger significance.

Table 3

Variables	1	2	3	4	5	6	7	8	9
Social Media Usage Frequency	1.00	0.45**	0.37**	0.64**	0.58**	0.30**	-0.32**	-0.28**	-0.41**
Platform Type (Instagram)	0.45**	1.00	0.33**	0.25**	0.46**	0.24**	0.18*	0.10	-0.19*
Purpose of Use (Social Interaction)	0.37**	0.33**	1.00	0.39**	0.30**	0.21*	-0.15	-0.20*	-0.12
Session Duration	0.64**	0.25**	0.39**	1.00	0.54**	0.33**	-0.27**	-0.32**	-0.43**
Number of Friends/Followers	0.58**	0.46**	0.30**	0.54**	1.00	0.26**	0.15*	0.22*	-0.25**
Cyberbullying Exposure	0.30**	0.24**	0.21*	0.33**	0.26**	1.00	-0.35**	-0.40**	-0.38**
Identity Formation (AIECS)	-0.32**	0.18*	-0.15	-0.27**	0.15*	-0.35**	1.00	0.42**	0.38**
Peer Relationships (Support)	-0.28**	0.10	-0.20*	-0.32**	0.22*	-0.40**	0.42**	1.00	0.28**
Academic Performance (GPA)	-0.41**	-0.19*	-0.12	-0.43**	-0.25**	-0.38**	0.38**	0.28**	1.00

Social Media Usage Frequency is negatively correlated with both identity formation (r = -0.32, $p < 0.01$) and academic performance (r = -0.41, $p < 0.01$), meaning that as social media usage increases, identity formation scores and academic outcomes tend to decrease. Cyberbullying Exposure shows significant negative correlations with peer relationships (r = -0.40), identity formation (r = -0.35), and academic performance (r = -0.38), suggesting that cyberbullying adversely affects all these areas. Session Duration is significantly correlated with peer relationships (r = -0.32) and academic performance (r = -0.43), indicating that longer sessions on social media are linked with poorer relationships and lower academic outcomes. These correlations suggest key patterns in how social media usage and cyberbullying exposure affect developmental outcomes in adolescents.

4.4. Multiple Linear Regression (for Identity Formation)

The multiple linear regression table explores the collective influence of six independent variables on identity formation. The unstandardized coefficient (B) indicates the direct effect of each independent variable on the dependent variable, while the standardized coefficient (Beta) shows the relative strength of these effects.

Table 4

Model	Unstandardized Coefficients (B)	Standardized Coefficients (Beta)	Standard Error	t-value	p-value
(Constant)	1.735	—	0.235	7.386	<0.001
Social Media Usage Frequency	0.341	0.423	0.090	3.789	0.001
Platform Type (Instagram)	0.272	0.215	0.121	2.248	0.025
Session Duration	-0.213	-0.283	0.080	-2.650	0.010
Number of Friends/Followers	0.141	0.253	0.071	2.000	0.046
Cyberbullying Exposure	-0.302	-0.308	0.111	-2.725	0.007

Social Media Usage Frequency positively predicts identity formation (B = 0.341, Beta = 0.423, p = 0.001), suggesting that higher social media use supports identity development, contrary to the common assumption that higher usage is detrimental in this regard. Session Duration negatively predicts identity formation (B = -0.213, Beta = -0.283, p = 0.010), indicating that longer sessions on social media harm identity formation. Cyberbullying Exposure has a strong negative impact on identity formation (B = -0.302, Beta = -0.308, p = 0.007), revealing that exposure to cyberbullying significantly disrupts identity development.

4.5. MANOVA (for Peer Relationships)

The Multivariate Analysis of Variance (MANOVA) tests how platform type, purpose of use, and cyberbullying exposure affect peer relationships. Wilks' Lambda is used to assess the overall effect of each independent variable, with smaller values indicating greater explanatory power.

Table 5

Effect	Value	F	Hypothesis df	Error df	p-value
Platform Type	Wilks' Lambda = 0.892	3.65	3	203	0.012
Purpose of Use	Wilks' Lambda = 0.923	2.41	3	203	0.048
Cyberbullying Exposure	Wilks' Lambda = 0.850	4.21	3	203	0.005

Platform Type has a significant effect on peer relationships (Wilks' Lambda = 0.892, p = 0.012), meaning that different social media platforms influence how adolescents engage with their peers. Cyberbullying Exposure has the strongest negative effect on peer relationships (Wilks' Lambda = 0.850, p = 0.005), suggesting that adolescents exposed to cyberbullying experience poorer peer relationship quality.

4.6. Stepwise Multiple Regression (for Academic Performance)

The stepwise regression identifies the strongest predictors of academic performance (GPA) among the six independent variables. The final model only retains the variables that make a significant contribution to explaining variance in GPA.

Table 6

Model	Unstandardized Coefficients (B)	Standardized Coefficients (Beta)	Standard Error	t-value	p-value
Social Media Usage Frequency	-0.213	-0.351	0.051	-4.176	<0.001
Cyberbullying Exposure	-0.185	-0.309	0.054	-3.426	0.002
Purpose of Use (Education)	0.228	0.252	0.055	3.655	0.001

Social Media Usage Frequency has a strong negative effect on academic performance (B = -0.213, Beta = -0.351, p < 0.001), indicating that more time spent on social media correlates with lower academic performance. Cyberbullying Exposure also negatively predicts academic performance (B = -0.185, Beta = -0.309, p = 0.002), highlighting the detrimental impact of online harassment on students' academic outcomes. Purpose of Use (Education) positively predicts academic performance (B = 0.228, Beta = 0.252, p = 0.001), suggesting that using social media for educational purposes enhances academic performance.

5. Discussion of Findings

The results of this study provide an expansive view about how disparate aspects of social media usage influence other important areas of adolescent development. The analysis confirmed and nuanced a number of hypotheses by comparing the results with current scholarly literature. Below, the results discussed in more detail with reference to some of the most relevant studies and citations, which either support or contrast with the study's conclusions.

Social media use and identity formation: The relationship is very complex. Does increased frequency of usage, along with a larger social network size, enhance identity exploration and identify clarity? Offering special contribution: Further, this study presents pertinent insights into the ongoing debate in the literature. The study partially supports H1: Higher social media usage frequency negatively affects identity formation, since these findings indicate that while a greater level of usage may lead to better exploration of identity, it more often results in lower levels of identity clarity when such usage becomes excessive. These outcomes are consistent with earlier research by (Yang & Bradford Brown, 2016), where moderate use of social media was proven to enable adolescents to

explore and experiment in the different aspects of identity, seek feedback, and test out and negotiate various identities through the conversations created and shared through new media. In this light, as adolescents' experiment with self-presentation and interact through a variety of peer groups, medias serve as an arena for them to be able to meaningfully talk about identity, which further enhances exploration.

However, negative effects of overexposure in terms of clarity of identity are related to studies such as (Crone & Achterberg, 2022), which suggests that teenagers exposed to excessive loads of social media spend time in more identity confusion due to continuous social comparison. Adolescently exposed to idealized images and lifestyles online may be under increased pressure to conform with possible problems related to self-esteem and an unclear or fragmented sense of self. This implies that the dual nature of social media about identity has both positive and negative impacts; moderate usage is effective, but excessive usage brings about problems about the stability of identity. The findings verified H4: Larger social networks positively impact the exploration and formation of identity. In fact, adolescents with larger social networks receive more frequent and diverse feedback, which is likely to facilitate the exploration of identity. According to (Beyens et al., 2024) extensive networks that adolescents have been associated with a huge possibility of having a wider range of social interactions that can give opportunities for exploring more angles of their personality. Bigger social adolescents are exposed to different views and standards of the social environment, therefore allowing more comprehensive explorations and development of identity.

At the same time, greater social connections also bring greater pressure to adjust to peer expectations, thus cases of identity diffusion happen in some adolescents. The emotional labor of managing extensive networks complicates the clarity of identity. In fact, such findings are similar to those presented by (Manago et al., 2015), in which teenagers with larger social networks encounter more social stress related to the maintenance of relationships and management of self-presentation. H1 (Greater usage frequency of social media eliminates identity formation): Partially Accepted. Moderate usage of social media establishes identity exploration, while excessive usage negates identity clarity. H4 (Deeper social ties positively predict identity exploration and formation): Supported. Larger networks enable identity exploration but also generate social constraint that depresses identity clarity.

Different media platforms are other influences of peer relations in different ways. Platforms such as Instagram tend to fuel peer conflict because increased social comparison tends to happen due to emphasis on visual communication. This can be aligned with findings in research by (Santarossa & Woodruff, 2017; Riaz et al., 2024) that concluded that the tendency of Instagram to focus images and appearance tends to cause peer jealousy and conflicts. On the other hand, a platform like Snapchat that accepts aging creates more immediate and personally intimate contact among peers that can diffuse conflicts but at the same time can heighten feelings afforded to miscommunication. H2 (Exposure to cyberbullying negatively affects peer relationships): Accepted. Cyberbullying severely affects peer relationships, and there is an increase in peer conflict and social withdrawal.

6. Conclusion

This study delved more deeply into the complex interplay between adolescent social media usage and three critical areas of adolescent development: identity formation, peer relationships, and academic performance. Taking cues from analysis on six independent variables-social media usage frequency, type of platform, purpose of use, session duration, number of friends/followers, and exposure to cyberbullying-this research made a new contribution by adding nuanced insights into how social media facilitates and obstructs adolescent development. Significant interactions were found between the advantages and the disadvantages of social media usage. The rate of use had both positive and negative implications in shaping identity. On one hand, a moderate level of use enabled exploring the identity while affording the youths the opportunity to test various permutations and combinations of self-presentation and interact among different peer groups. On the other hand, overutilization of social media blurred identity clarity primarily because of increased exposure to social comparison and pressure to conform to societal expectations. This finding suggests that, although social media might serve as a forum for discovery of oneself, overuse leads to confusion and conflict regarding personal identity.

This study has a number of important contributions toward the field of adolescent development and education, as it deepens our understanding of how patterns of social media use impact key developmental outcomes. The highest contribution is on the establishment of context-specific effects of social media among adolescents. Although much research has taken an approach to understand, in broad terms, the influence of social media on adolescents, this study placed emphasis on the fact that the influence of social media over the adolescent population varies highly upon how and why it is used. Therefore, social media usage does not determine positive or negative outcomes as revealed by the findings of the study. The purpose of use and the content with which the adolescents engage on these sites are the determinants of the effects on their development. For example, the same number of hours spent on social media could mean academic gains as well as losses because whether they use it to study or just play is what matters in terms of outcome.

This research contributes further to the understanding of identity formation in the digital age. Today's adolescents enter the various phases of identity development within a social context that connects both online and offline worlds. This research analysis articulated that the size of the social networks and how much, exactly, adolescents are actually given online feedbacks decide the identity creation of them. Such a finding actually gets in good relation with the claim stating that social media is not only a passive means of communication but rather an active arena where identity is continually negotiated. The study provides an important understanding of the availability of tools adolescents might need in navigating the complexities of online identity formation, especially with regard to managing social comparison and peer pressure.

6.1. Implications

Parental guidance would help teenagers effectively deal with social media. Appropriate limits on the amount of time spent using these technologies should be set, and adolescents encouraged to participate in sites and platforms that foster education or personal interest. This would enable the youth to better handle risks involved in social media by keeping track of their habits and facilitating discussions of issues they have encountered online. A parent should also act proactively to identify cyberbullying and emotional distress signs related to social media. Addressing governance on prevention policies of cyberbullying and demanding more stringent

action from social media sites on protecting adolescents online needs to be taken into consideration. Policies need to stand for stronger safety measures and reporting mechanisms on the site of social media, along with increasing effective enforcement of anti-bullying guidelines. Internet safety programs targeting adolescents must also be looked at with priority, teaching responsible online behavior and protecting children from hurt.

6.2. Recommendations

School curricula should include social media education, and it is also important in assisting with teaching responsible use to adolescents. An enriched meaning to healthy identity development as well as better relationships with friends can come through this method.

Future research could be dedicated to monitoring the long-term effects that social media may have on adolescent identity and well-being within cultural and educational contexts. Exploratory studies may help clarify how social media impacts different categories of adolescents over time, helping in fine-tuning intervention approaches.

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