

Darkside of Social Media on Academic Performance of College Students in Nepal

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Abstract

Background: Social media has become an integral part of students' academic and social lives, offering opportunities for communication, learning, and information sharing. However, excessive use of social media may lead to loneliness, self-presentation pressure, information overload, and social media addiction, which can negatively affect students' academic performance and overall well-being. Despite the growing prevalence of social media use among Nepalese youth, limited studies have examined its dark side and its impact on academic outcomes.

Purpose: The main purpose of this study is to analyze the darkside of social media on academic performance of graduate's students in Nepal.

Design/methodology/approach: The study used an explanatory research approach to analyze the darkside of social media on academic performance of college students in Nepal by employing S-O-B-C Model. Purposive sampling is employed for this study under non-probability sampling technique. Data was collected from 431 respondents using self-administered structured questions through the KOBO toolbox. Subsequently, the data collected were analyzed employing Excel and SmartPLS 4.0.

Findings: Loneliness and Self-presentation have significant relationship with Reduced Academic Performance where Information Overload and Social Media Addiction are mediating variables.

Conclusion: This study highlights loneliness and the demand for self-presentation as important drivers, which lead to information overload and, ultimately, social media addiction. The negative consequences include distractions, cyberbullying, negative feedback addiction, and mental health issues. To address these issues, the research suggests measures such as limiting social media use, encouraging mindful engagement, and practicing self-compassion.

Keywords: Loneliness, self-presentation, information overload, social media addiction, reduced academic performance



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1. Introduction

Global connections are made feasible by social media. It's likely that people will learn effective time and resource management, develop the skill of learning and use new talents in critical situations, and communicate this information in a simple manner and clearly to the intended audience. Adolescents can share their thoughts, knowledge, and experiences over the Internet and start discussions. Today, the revolution in communication has united us despite our geographical differences. (Adekoya et al., 2023). The internet is becoming a vital communication tool for individuals personal and academic lives. Social media has a major role in raising living standards since it facilitates global access to global markets and a range of services (Carr & Hayes, 2015). In addition to improving connectivity and global prospects, accessibility is also causing certain social problems, particularly in underdeveloped nations (Alalwan et al., 2017). Globally, social media usage has increased recently. Twitter had over 177 million tweets per day, Facebook had over 750 million users, LinkedIn had over 100 million subscribers, and YouTube had three billion views per day as of July 2011 (Guy, 2012). The use of social media in a student's social life has grown significantly. In numerous colleges, it is currently regarded as a learning platform that enhances student engagement and skills (Cauberghe et al., 2021). Such platforms give individuals the chance to interact, communicate, access data, and do research. Facebook, Twitter, Instagram, YouTube, WhatsApp, and many more online technological platforms are included in it (Sands et al., 2020). The world has only gotten smaller due to the widespread usage of technology.

Social media is deeply ingrained in society, involving more than four billion global active users, who are estimated to spend at least two hours daily on these platforms for varied purposes such as connecting with peer groups and browsing exchanged content (Jabeen et al., 2023). There is considerable public anxiety that social media distracts from education and reduces the social skills of young people despite an exemplary body of prior research that rejects any such simple conclusions (Kandasamy et al., 2019). Social media presents enormous risks for individuals, communities, firms, and even for society. Examples for this “darkside” of social media include addictive use, Social Comparison, anxiety, feeling of loneliness, online information overload, and impact on academic performance (Baccarella et al., 2018).

Social media has enabled university students to connect with others beyond geographical and time limitations. However, excessive social interactions can create social overload, leading to stress, exhaustion, and psychological strain (Fu et al., 2020). Social media addiction has been linked to mental health issues, sleep disturbances, relationship problems, and reduced daily functioning. Studies indicate that intensive social media use, particularly appearance-related comparisons and evaluations, increases the risk of depression and social anxiety among young people (Tandon et al., 2021). While social media facilitates communication and self-expression, it can also foster loneliness, jealousy, and feelings of inadequacy through constant social comparison. Information overload and excessive engagement may contribute to addiction, anxiety, depression, and ultimately poorer academic performance among university students (Jabeen., 2023).

In context of Nepal, Adolescents were more efficient social media usage techniques to cut down on time wasted on unproductive conversations and other activities. The psychology of social media users, the availability of different social media, and the total amount of time spent on social media are the main factors that have a big impact on kids, especially in recent years. The reach and importance of social media increase with their intelligent use (Kandasamy et al., 2019). The effect on young people is positively correlated with the types of social media used, the amount of time spent on social media, and the accessibility of social media users. The more social media platforms there are, the more apparent this becomes. The more social media platforms there are and the more time users spend on them, the more obvious it is that social media has an influence on young.

Approximately one-third of undergraduate students experience internet addiction, which is significantly associated with factors such as excessive internet use, parental relationships, parental monitoring, and loneliness (Kandasamy et al., 2019). Entertainment, social networking, and social media use are among the primary reasons for internet engagement, with social media being the most commonly used platform among students. Given the widespread use of social media among university students, concerns have

emerged regarding its potential impact on mental health, academic performance, and overall well-being. Therefore, this study explores the mental health challenges faced by youth and how they manage these issues while balancing their educational responsibilities. As social media has become an integral part of students' daily lives, understanding its possible negative consequences is increasingly important.

2. Theoretical Framework and Hypothesis Formulation

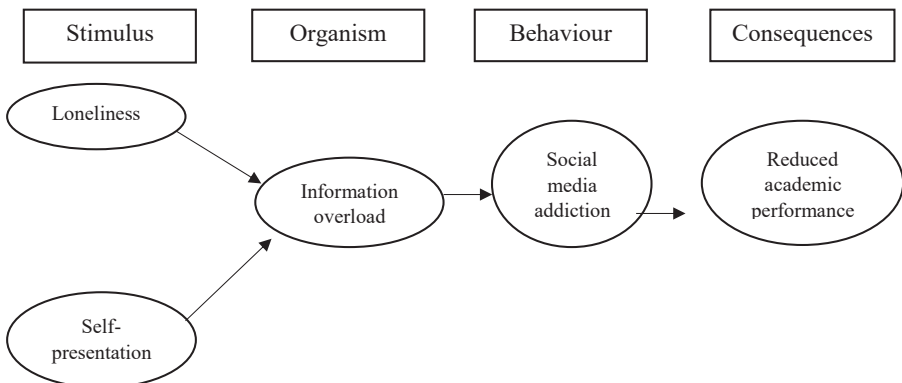
The theoretical framework introduces and describes the theory which explains why the research problem under study exists (Lederman & Lederman, 2015). This theoretical framework outlines the hypothesis that provides an explanation for the occurrence of the research issue being investigated. The theoretical framework section discusses the theories: Social Learning theory (SOBC Model), Social Cognitive Theory (SCT), Users and Gratification Theory, Technology Acceptance Model (TAM) and Social Efficacy Theory. Social Learning Theory (SOBC) core concept of Albert Bandura's social learning theory is the idea that people can learn by seeing and copying the observable behaviors of others social learning theorists contend that observed behavior and learning are influenced by interactions between cognitive and environmental elements (Bandura, 1969). The Social Cognitive theory is the emphasis on social influence and its emphasis on external and internal social reinforcement. The idea of human agency, which holds that people may actively participate in their own growth and have some degree of control over their ideas, feelings, and behaviors, is the foundation of social cognitive theory (Pajares et al., 2009). Users and Gratification Theory is a theoretical framework to investigate the introduction of new media kinds using the U&G theory as a guide, a number of researchers have discovered distinct satisfaction variables for using SNS (Cao et al., 2018). Technology Acceptance Theory (TAM) explains a person's behavior through their intentions. Intention in turn is determined by two constructs: individual attitudes toward the behavior and social norms or the belief that specific individuals or a specific group would approve or disprove of the behavior (Rauniar et al., 2014). Social Efficacy Theory is the measure of one's belief in one's own capacity to perform at a given level, such as lifting a heavier object or persevering through more repetitions. Crucially, self-efficacy varies depending on the circumstances; in fact, it's sometimes described as situation-specific self-confidence (McLachlan et al., 2013).

Among all these theories, social learning theory is more appropriate where Albert Bandura's (SOBC) core concept of social learning theory that helps in the idea that people can learn by seeing and copying the observable behaviors of others Social learning theorists contend that observed behavior and learning are influenced by interactions between cognitive and environmental elements that deals with four major elements like Stimulus, Organism, Behavior and Consequences. In summary, this theory will help to understand the college student's psychology accordingly that builds the impact and results to the reduction on academic performance.

Figure 1 shows the conceptual model of this research.

Figure 1

Conceptual Framework



Sources: Modified from (Jabeen et al., 2023)

Loneliness and information overload

Loneliness is a prevalent psychosocial malady in modern society (Nowland et al., 2018). Loneliness is defined as the aversive state of feeling that there is a discrepancy between one's actual and desired social relationships (O'Day & Heimberg, 2021). In this regard, (Hunt et al., 2018) discovered that restricting the use of SMP may result in a decreased sense of loneliness. A meta-analysis by (Song et al., 2014) discovered a significant correlation between Facebook use and loneliness. They also investigated possible structural relationships between Facebook use and loneliness and discovered that shyness and a lack of social support predicted both the connection. Young adult students are more likely to use both active and passive SMP use to overcome loneliness because they are comparatively more open to the negative effects of problematic SMP use (MacDonald & Schermer, 2021). However, this could lead to information overload by increasing the amount of shared information they are exposed to. Thus, based on the above argument, this leads to the development of the following hypothesis:

H1: Loneliness is significantly associated with information overload among students.

Self-presentation and information overload

Self-presentation, for instance, has been demonstrated to have a strong correlation with users' willingness to upload or share images and engage in social media interactions with others through shares, likes, and comments (Pang, 2020). Chua and Chang (2016) suggested in a different study that the desire to present the best possible version of oneself in a way that appeals to the audience frequently drives self-presentation. Another significant SMP affordance and psychological need that has been shown to have a major effect on people's use of SMP and experiences with DoSM phenomena such overloads is self-presentation (Islam et al., 2019). This suggests that self-presentation on SMPs might facilitate social interaction among users, which is confirmed by the principles of SDT. But Yang et al., (2017). Suggest that for users (i.e., students) to portray a pictured image of themselves, they must also actively and passively use SMP to determine what would appeal to the audience that watches their material. Thus, students may experience an overflow of information and communication because to this high SMP use that is motivated by self-presentation. Students may be particularly concerned with the overt need to maintain a positive image among their peers in order to gain social inclusion and establish their unique identities, so it is possible that self-presentation may be significantly and positively related to information overload Yang et al., (2017). Recent research (Liu, 2022) demonstrates that young adults who try to preserve a portrayed self-impression on SMPs by self-presentation ways might experience SMF improves our argument.

H2: Self-presentation is significantly associated with Information Overload among students.

Information overload and social media addiction

A multitude of research has suggested that information and communication (i.e., cognitive) overload are linked to SMF (e.g., (Whelan et al., 2020) which can influence an individual's SMP usage patterns, often leading them to lessen or discontinue accessing these platforms (Fu et al., 2020). On the other hand, it is possible that this overload may also cause someone to work harder at controlling SMP communication. This suggestion is motivated by the SDT's beliefs even though, to the greatest of our knowledge, there has never been any prior evidence to support this viewpoint (Deci & Ryan, 2000) which proposes that individuals determine the actions they undertake to fulfil the basic psychological need of relatedness. This is a critical need for students who are attempting to establish their identity during a developmentally transitional phase that encompasses their college years (Yang et al., 2017). It is possible that due to their situational triggers of loneliness and desire for self-presentation, such students may try to cope with their cognitive overload by putting greater effort into maintaining connectivity with SMPs. This constant connectivity could be a way to cope with the negative state of cognitive overload created by the constant flow of SMP-related content (i.e., information) and communication. Moreover, (Tandon et al., 2021) determined that both forms of overload were significantly and positively correlated with deficient self-regulation, which they conceptualized as individuals diminished capacity to alter their behavior in

pursuance of long-term goals. Furthermore, recent studies have suggested that technology may be used to cope with various stressors in life. For instance, (Tarafdar et al., 2020) suggested that individuals may distract themselves from perceived stressors, such as social overload, by using the same SMPs from which the stressors are derived, albeit in a different way. Such studies imply that to cope with information and communication overload, individuals may engage more frequently with different SMPs features as a coping strategy.

H3: Information overload is significantly associated with social media addiction among students.

Social media addiction and reduced academic performance

Previous research has repeatedly demonstrated that excessive or obsessive social media usage, or SMA, can have a variety of negative consequences on people's personal lives, including trouble sleeping (Tandon et al., 2020). Scholars have previously suggested (e.g., (Koranteng et al., 2019) and determined that such SMP use also affects students' AP in colleges and schools (Boahene et al., 2019). For example, (Malik et al., 2021) determined that excessive use of social networking apps like WhatsApp could lead to fatigue, in turn causing RAP among Indian students. According to (Tandon et al., 2021), excessive SMP use driven by FoMO could lead individuals to be unable to self-regulate their SMP use leading to RAP. Similarly, (Busalim et al., 2019) determined that Facebook addiction is significantly negatively correlated with students' AP. Similarly with previous research, we further imply that students who use SMP, or SMA, frequently may develop RAP because it might take their focus away from their academic goals and cause psychological distraction. Consequently, we have put up the following hypothesis to suggest that SMA is a factor in reduced AP.

H4: Social media addiction is significantly associated with reduced academic performance among students.

From the above hypothesis, two serial mediating hypotheses were formulated.

H5: Information overload and Social Media Addiction has mediating effect in the relationship between loneliness and reduced academic performance.

H6: Information overload and Social Media Addiction has mediating effect in the relationship between self-presentation and reduced academic performance.

Table 1

Variable and its Definition

Contract/ Variables	Variable notion	Observed Variable	Explanation	Source
Loneliness	L1	Outsider	Feeling like an outsider due to social media addiction.	Jabeen, et al., (2023)
	L2	Isolated	Isolated from others.	
	L3	Unhappy	Unhappy because of the feeling of being isolated.	
	L4	Lonely	Lonely even though people are around.	Nowland et al., (2018)
	L5	Opinion	Holding the opinion that not many people truly know.	
Self-Presentation	SP1	Detailed profile	Detailed profile on social media.	Jabeen et al., (2023)
	SP2	Expressive	Social media profiles tell a lot.	
	SP3	Reveal	Reveal a lot of information on social media.	
	SP4	Open	Openly share about emotions on social media.	Yang et al., (2017)
	SP5	Multiple aspects	Present multiple aspects on social media.	

Contract/ Variables	Variable notion	Observed Variable	Explanation	Source
Information overload	IO1	Distraction	Distracted by the excessive amount of information in social media.	Jabeen et al., (2023)
	IO2	Overwhelmed	Overwhelmed by the amount of information that process daily from social media.	
	IO3	Feeling Stress and Anxiety	Feeling stress and anxiety, confusion and delay in decision making, waste of time and reduced productivity.	
	IO4	Information overload	Problem is with too much information to make sense of, instead of not having enough information to make decisions.	Adekoya et al., (2023)
	IO5	Destroy	Information overload Destroys self-confidence.	
Social media addiction	SMA1	Excessive use	Spend a lot of time thinking about or planning the use of social media.	Jabeen et al., (2023)
	SMA2	Urge	Urge to use social media more.	
	SMA3	Forget Personal problems	Use of social media to forget about personal problems.	
	SMA4	Tried	Tried to cut down on the use of social media without success.	
	SMA5	Restless	Become restless or troubled if prohibited from using social media.	
Reduced academic performance	RAP1	Harmed	Studies have been harmed because of the time spent on social media.	
	RAP2	Time spent	Too tired to go to college the next day because of too much time spent on social media.	
	RAP3	College percentage	College percentage has been harmed because of time spent on social media.	
	RAP4	Incomplete assignments	Failed to complete assignments because of social media addiction.	
	RAP5	Fail focusing	Fail to stay focused	

3. Research Methods

3.1 Study Area and Population

Explanatory research design was employed in this study (Dangol & Siddique, 2026). The study area for this study is Nepal. Nepal is a landlocked country in South Asia, neighboring China to the north and India to the south, east, and west. The nation covers 147,516 square kilometers of territory and is located between coordinates 28°N and 84°E. Nepal was chosen as the research area because of the growing use of social media throughout the country. Nepal has seen an incredible rise in internet usage, particularly among young people. This makes it an ideal environment for researching the impact of social media on college students, as a sizable proportion of the population is likely to use various social media platforms. Social media has both positive and negative aspects that play a role in the way individuals perform their daily routine. However, in current circumstances, there are more unfavorable sites that have been observed in young people, which have impacted their well-being. Bachelors and master's students who use social media are the population for this study.

3.2 Sampling Techniques and Sample Size Determination

As the exact population of college students using social media in Nepal could not be determined, a non-probability purposive sampling technique was adopted for this study. Purposive sampling involves selecting respondents who possess characteristics relevant to the research objectives (Magar et al., 2023). Accordingly, college students who actively use social media were intentionally selected to provide information regarding the impact of the dark side of social media on academic performance. The sample size was determined using Cochran’s formula for an infinite population (Singh et al., 2011; Lawaju et al., 2024). Where at a 95% confidence level, , , and . The calculated sample size was 384.16. To account for non-response error, an additional 5% (19.21) was added, resulting in a required sample size of 403 respondents. However, a total of 431 valid responses were collected, exceeding the minimum requirement and increasing the robustness of the study findings.

3.3 Research Instrument, Data Collection and Anlaysia

Research instruments provide ways for discovering facts that also operate as data collection tools. The researcher often selects research tools that are closely matched with the study's technique. Interviews, observations, and surveys are all examples of research tools, with the latter being particularly useful for standardizing surveys. This is a structured document with questions. To obtain answers from respondents or research sources for data collecting.

For this study, a structured questionnaire is employed, offering some control or direction for the responses. Referred to as a closed structure, these questions are typically brief, requiring respondents to provide yes or no responses within the given options. The data collection process utilizes the KOBO toolbox, where the questionnaire is inserted, and pilot testing is conducted on a small sample to assess consistency and accuracy. A total of 431 participated in the data collection process. A pilot test involving 15 samples is being conducted to gather feedback on the fit of the questionnaire. The use of the KOBO toolbox facilitates data collection through both online and offline mediums, offering cost savings as data can be inputted through mobile services.

Data analysis employs both descriptive and inferential approaches, including the use of structural equation modeling (SEM). The entry of information and analysis are carried out using a variety of software packages, including KOBO Toolbox, Microsoft Excel, and Smart PLS. Specifically, entering data systems include KOBO Toolbox and Microsoft Excel. The results of the analysis are graphically presented through graphical representations.

4. Results

4.1 Socio Demographic Analysis

Table 2

Socio Demographic Analysis

Title	Category	Number	Percentage (%)
Gender	Female	238	55.22
	Male	191	44.32
	Others	1	0.23
Marital status	Unmarried	361	83.76
	Married	61	14.15
	Others	9	2.09
Age	18-24	243	56.38
	25-34	178	41.3
	35 above	10	2.32

Title	Category	Number	Percentage (%)
Location	Kathmandu	250	58
	Others	82	19.03
	Lalitpur	59	13.69
	Bhaktapur	40	9.28
Employment status	Full time Student	174	40.37
	Private Sector	111	25.75
	Self-Employed	59	13.69
	Not Employed	46	10.67
	Others	18	4.18
	Freelancer	10	2.32
	Public Sector	8	1.86
	Contract	4	0.93
Average Monthly Income	20,000-50,000	126	29.23
	Below 20,000	42	9.74
	50,000-100,000	23	5.34
	100,000 above	19	4.41

Out of 431 respondents, 55.22% of respondents are female and 44.32% are male whereas 0.23% were others this shows that the representation of female is higher than the male in this study whereas in similar study by (Whelan et al., 2020), majority are male(52%) (see Table 2). Similarly, out of 431 respondents 14.15% are married, 83.76% are unmarried, and 2.09% are others. Regarding the age range of respondents, the 18-24 age range receives the most responses (56.38%), followed by the 25-34 age range (41.3%), and 35 above age range (2.32%). It indicates that this study is influenced by the youths of age group 18-24 years. It reveals that most of the respondents are from Kathmandu Districts which is 250 (58%), 19.03% respondents are others, 13.69% from Lalitpur and 9.28% are from Bhaktapur. Talking about employment status of the respondents, 40.37% were full-time students, 25.75% were seen in private sector, 13.69% were self-employed, 10.67% were not employed, 4.18% were others, and 2.32% were freelancers and 0.93% on contract. In terms of average monthly income 29.23% of the respondents have income between Rs (20,000-50,000), 9.74% of them have income between Rs. (below 20,000), 5.34% have income of Rs (50,000-100,000), and 4.41% have income Rs (above 100,000).

4.2 General Background on Social Media

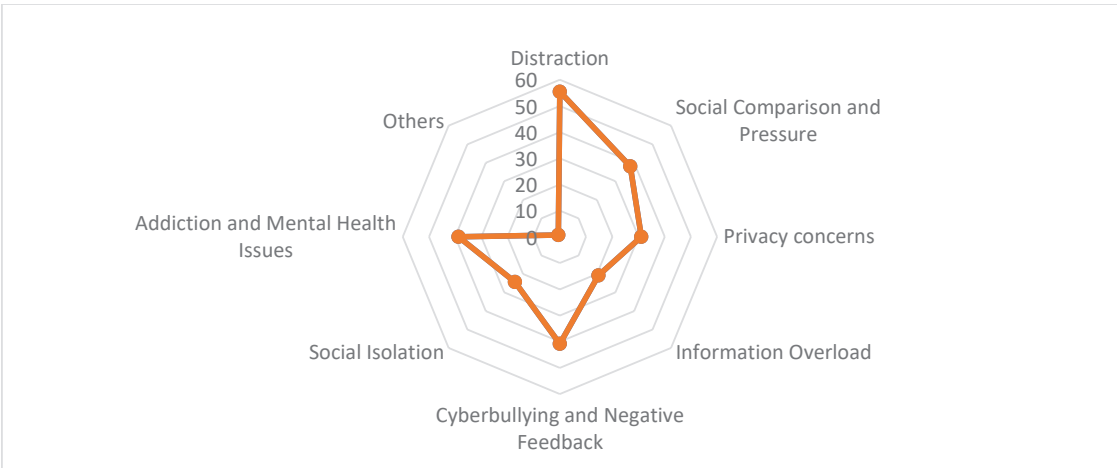
The broad usage on social media of college students related to when, how and how often and frequently they get distracted from social media sites has been mostly covered in this study. Respondents were asked when they started using social media. Respondents were asked when they started using social media sites. The study reveals that 47.33% related to social media since school, whereas 33.64% from high-school, 15.78% from bachelor’s and 3.02 from masters. When asked about how often they used social media 42.92% used social media frequently, 35.73% were seen using it always, 11.14% used occasionally, 9.51% used rarely and 0.46% were seen never using it. Similarly, when asked how frequently they get distracted from social media, 40.37% got distracted sometimes, 27.38% often were seen getting distracted, 13.46% rarely, 13.23% were always distracted and 5.34% never got distracted by social media. Respondents were seen actively engaged mostly by 65.2% on Instagram, 50.58% on Facebook, 21.35% were seen active on TikTok, 20.42% on Snapchat, 10.21% on twitter, were as 16.24% were actively in all of the above. Lastly, 61.02% of the respondents agreed that Social Media Addiction has impacted on their Academic Performance whereas 38.75% disagreed that Social Media Addiction doesn’t impact on their academic performance.

4.3 Problems that college Students Face Due to Social Media

The problems related to college students' faces due to social media are discussed in this section. The modal response to the question whether there are any problems that college students face due to social media shows that 74.01% of the respondents faced problems, while 25.75% of respondents do not face problems related to social media. Figure 2 reveals some of the major problem with college students in relation to social media where (55.45%) distraction, (40.84%) cyberbullying and negative feedback, (38.75%) addiction and mental health issues ,(38.05%) social comparison and pressure, (31.09%) privacy concerns , (24.36%) social isolation ,(20.88%) information overload and (0.93%) by other reasons.

Figure 2

Problems that college Students Face Due to Social Media



Source: Field study

The possible solutions to reduce college students' problems faced due to social media are discussed in this section. The modal response to the question whether there is any possible solution to reduce college students' problems faced due to social media shows that 68.91% of the respondents agreed to have possible solution, while 5.1% of respondents disagreed to have possible solution related to social media. Figure 15 reveals some of the major possible solution with college students in relation to social media where (54.99%) limit time spent on social media, (35.27%) mindful engagement, (32.25%) Practice self-compassion, (26.91%) privacy settings to control interactions, (25.75%) formulates strict rules regarding cyberbullying, (25.52%) develop effective information filtering strategies, (24.83%) prioritize offline experiences and (1.39%) with other solutions.

4.4 Inferential Analysis

Common Method Bias (CMB): Common method bias was examined by testing the full collinearity test was done. In this approach, every variable will regress against a single common variable, and if the VIF value is less than 3.3 (Basnet et al., 2024), there won't be common method bias problem. In this study, all the VIF values were under 3.3. This indicates that there is no problem of common method bias in this study.

Measurement Model Assessment: The measurement model's purpose is to verify consistently the results and components of the research framework are connected. In measurement model, internal consistency reliability, convergent validity and discriminant validity were assessed. For the internal consistency analysis, Cronbach's Alpha (CA), and Composite Reliability (CR) is tested. It is an indicator of the shared variance among the observed variables used as an indicator of a latent construct and measures the internal consistency in scale items. The threshold for CR should be 0.7 or higher and if it is exploratory research,

0.6 or higher is acceptable (Jati, 2016; Rajbhandari et al., 2022). The values of Cronbach’s Alpha (CA) and Composite Reliability (CR) for all constructs exceeded the acceptable criteria, confirming the internal consistency and reliability of the measurement model.

When the elements of a given measure converge to represent the underlying construct, convergent validity is demonstrated. In convergent validity, factor loading, and AVE are analyzed. A factor’s loading indicates how accurately a given item represents the underlying construct. Weaker outer loadings (0.70) are regularly found, even though factor loadings over 0.70 are typically advised. If the loading is less than 0.70, one should refrain from deleting an item. The AVE (Average Variance Extracted) is calculated by taking the average of the squared loadings of all indicators linked to a particular construct. If the AVE value is below 0.50 (Amatya et al., 2023), it suggests that there is a higher amount of error , on average , in the items than the variance explained by the measured factor structure Therefore, an AVE value greater than 0.5 is desirable (Jati, 2016). As shown in Table 3, the AVEs are all higher than 0.5, thereby indicating the data’s convergent validity.

Table 3
Common Method Bias, Reliability Analysis and Convergent Validity

Constructs	Items	Factor loading	AVE	CA	CR	VIF
Information overload	io1	0.787	0.593	0.828	0.879	1.803
	io2	0.742				
	io3	0.8				
	io4	0.773				
	io5	0.746				
Loneliness	ls1	0.828	0.703	0.894	0.922	1.876
	ls2	0.843				
	ls3	0.878				
	ls4	0.86				
	ls5	0.779				
Reduced Academic Performance	rap1	0.855	0.728	0.906	0.93	2.599
	rap2	0.827				
	rap3	0.887				
	rap4	0.873				
	rap5	0.822				
Social Media Addiction	sma1	0.773	0.601	0.834	0.883	2.548
	sma2	0.796				
	sma3	0.754				
	sma4	0.755				
	sma5	0.798				
Self-Presentation	sp1	0.812	0.717	0.901	0.927	1.787
	sp2	0.85				
	sp3	0.886				
	sp4	0.846				
	sp5	0.837				

Source: Field Study

The Fornell and Larcker criteria, as well as the HTMT ratio, are frequently used to assess discriminant validity, cross-loading. When a factor loading indication on one build is higher than any loadings on another, this is referred to as cross-loading (Li et al., 2020). Comparably, the Fornell and Larcker criterion entails determining if the average variance extracted (AVE) of each construct is greater than the squared correlation between two constructs. In general, HTMT values less than 0.9 are allowed (Fornell & Lacker,

1981). The data is legitimate since every one of the HTMT values for the constructs in our study is less than 0.9, which satisfies the requirements for discriminant validity. As presented in Table 4, all HTMT values were below the recommended threshold of 0.90, indicating no issues with discriminant validity. Table 5 shows that the Fornell–Larcker criterion was satisfied, as the square root of the AVE for each construct exceeded its inter-construct correlations. Similarly, Table 6 demonstrates that all indicators loaded more strongly on their respective constructs than on other constructs, confirming satisfactory cross-loadings. Therefore, the results indicate that discriminant validity was successfully established for all constructs in the study.

Table 4

HTMT Results

Constructs	Io	Ls	Rap	sma
Io				
Ls	0.697			
Rap	0.752	0.778		
Sma	0.87	0.773	0.857	
Sp	0.594	0.701	0.677	0.701

Table 5

Fornell Larcker Criterion Results

Constructs	Io	Ls	Rap	sma	Sp
Io	0.77				
Ls	0.604	0.838			
Rap	0.653	0.701	0.853		
Sma	0.725	0.668	0.748	0.775	
Sp	0.513	0.631	0.612	0.611	0.847

Table 6

Cross Loading

Constructs	Io	Ls	Rap	sma	Sp
io1	0.787	0.459	0.528	0.57	0.407
io2	0.742	0.395	0.439	0.54	0.411
io3	0.8	0.464	0.535	0.603	0.351
io4	0.773	0.467	0.508	0.534	0.355
io5	0.746	0.532	0.497	0.541	0.452
ls1	0.56	0.828	0.618	0.569	0.58
ls2	0.503	0.843	0.587	0.569	0.543
ls3	0.536	0.878	0.624	0.578	0.558
ls4	0.506	0.86	0.562	0.565	0.49
ls5	0.414	0.779	0.543	0.517	0.467

Constructs	Io	Ls	Rap	sma	Sp
rap1	0.602	0.561	0.855	0.661	0.475
rap2	0.534	0.622	0.827	0.638	0.593
rap3	0.583	0.604	0.887	0.635	0.528
rap4	0.533	0.615	0.873	0.635	0.553
rap5	0.533	0.587	0.822	0.624	0.458
sma1	0.558	0.513	0.551	0.773	0.506
sma2	0.625	0.509	0.578	0.796	0.492
sma3	0.495	0.527	0.515	0.754	0.377
sma4	0.563	0.463	0.571	0.755	0.44
sma5	0.564	0.576	0.672	0.798	0.541
sp1	0.428	0.498	0.494	0.533	0.812
sp2	0.42	0.488	0.513	0.497	0.85
sp3	0.421	0.555	0.52	0.525	0.886
sp4	0.447	0.593	0.532	0.508	0.846
sp5	0.452	0.535	0.532	0.524	0.837

Goodness of Fit: Goodness of fit refers to how well a statistical model describes the observed data. In other words, it determines how well the model matches the data. The SRMR (Standardized Root-Mean-Square Residual) is a metric used to assess the fit of a statistical model. It is used to assess how well a model fits the data on which it was constructed and to compare other models. To guarantee that the model fits the data well, the SRMR value should be less than 0.1 (Hu & Bentler, 1999). The SRMR value for this model is less than 0.053 (less than 0.08), indicating that the model is fit.

Structural Model Assessment

The path analysis is conducted using the SmartPLS 4 software, and the calculation and interpretation are based on the results gathered from SmartPLS 4. The observed variables were connected to other variables, illustrating the conceptual model's hypothesized linkage. The resulting path model and the findings of the path analysis are typically shown together as a path diagram (see Figure 3). The structural model helps in determining the relationship between the latent variables of the study, which is assessed by means of hypothesis testing considering the significance and relevance of the path coefficient and confidence interval criteria. This study has four hypotheses linked to Loneliness, Self-Presentation, Information Overload, Social Media Addiction, and Reduced Academic Performance.

Figure 3

Path Analysis

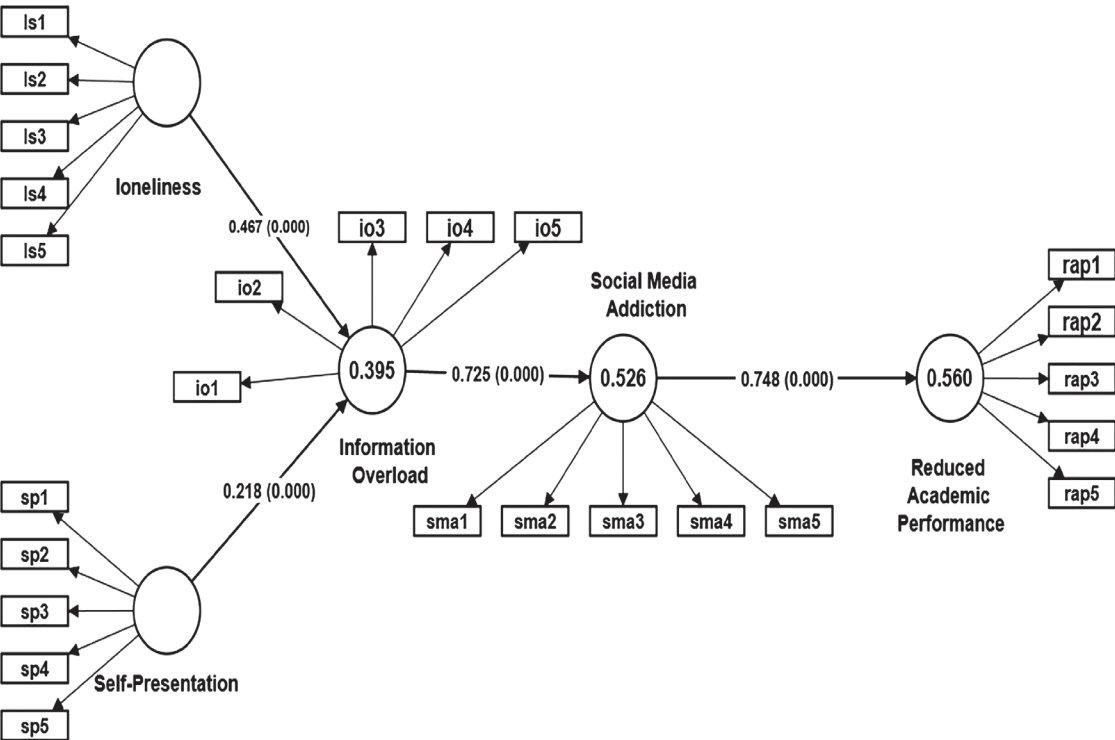


Table 7

Hypothesis Test

Hypotheses	B	SD	t-values	P-values	LL 2.5%	UL 97.5%	Decisions
H1: LS->IO	0.467	0.048	9.807	0.000	0.37	0.557	Supported
H2: SP-> IO	0.218	0.051	4.302	0.000	0.119	0.317	Supported
H3: IO -> SMA	0.725	0.032	22.619	0.000	0.652	0.779	Supported
H4: SMA -> RAP	0.748	0.023	33.214	0.000	0.7	0.789	Supported

Note: 95% confidence interval with a bootstrapping of 10,000 sub samples was used.

Table 7 presents the results of the hypothesis testing using structural equation modeling with bootstrapping (10,000 subsamples) at a 5% significance level. All four direct hypotheses (H1–H4) are supported, as all p-values are below 0.05 and the confidence intervals do not include zero. Specifically, H1 shows that loneliness significantly influences information overload ($\beta = 0.467$, $t = 9.807$), indicating a strong positive relationship. H2 also confirms a significant positive effect of self-presentation on information overload ($\beta = 0.218$, $t = 4.302$). This suggests that both psychological and behavioral factors contribute to increased information overload among students. Furthermore, H3 indicates a strong and highly significant relationship between information overload and social media addiction ($\beta = 0.725$, $t = 22.619$), implying that excessive information exposure substantially increases addictive behavior. Similarly, H4 reveals that social media addiction has a strong positive effect on reduced academic performance ($\beta = 0.748$, $t = 33.214$), highlighting its detrimental academic impact.

Table 8

Mediation Analysis

Mediating Hypothesis	Beta	SD	t value	P values	LL (2.5%)	UL (97.5%)	Decision
H5: ls -> io -> sma -> rap	0.254	0.032	7.978	0.000	0.192	0.317	Supported
H6: sp -> io -> sma -> rap	0.118	0.03	3.962	0.000	0.063	0.179	Supported

Table 8 represents the result of a statistical analysis conducted to test the mediating role of information overload and social media addiction in between endogenous and exogenous latent constructs. In this study both mediating hypotheses are serial mediation in which Information overload and social media Addiction collectively attached mediating variable. From the result it was observed that all the hypotheses were acts indicating that Information overload and social media Addiction plays significant role in the relationship between Self-Presentation, Loneliness and Reduced Academic performance. In first hypothesis, Information Overload and Social Media Addiction mediate the relationship between Loneliness and Reduced Academic Performance (Beta 0.254 and $P=0<0.05$). Furthermore, the second mediating hypothesis is also supported indicating that Information overload and Social Media Addiction has mediating effect in the relationship between self-presentation and reduced academic performance (Beta 0.118 and $P=0<0.05$).

5. Discussion

This study was conducted to analyze the problems that college students face due to social media and to assess the factors that influence academic performance of college students furthermore, it also helps to identify possible solutions to reduce the challenges. Various variables are used for analyzing the Darkside of social media on college students' academic performance. To meet the objective both descriptive and inferential data analysis methods have been used. To develop the link between the constraints PLS SEM is done with the measurement and structural model where the links between the different constructs with its items are measured.

According to the data collected from descriptive analysis, most of the respondents observed are females as compared to male, the gender distribution was approximately equal, with 55.22% female, 44.32% male, and 0.23% identifying as other gender. Most responders (56.38%) were between the ages of 18 and 24, with 25 and 34 representing 41.3%, showing a youthful demographic bias. Kathmandu District had the most responses (58%), followed by Lalitpur (13.69%), Bhaktapur (9.28%), and other locations (19.03%). Employment status varied: 40.37% were full-time students, 25.75% worked in the private sector, and 13.69% were self-employed. In terms of income, 29.23% reported earning between Rs 20,000 and Rs 50,000 per month, 50.34% earning Rs (50,000 to 100,000), 9.74% earning less than Rs 20,000, and 4.41% earning more than Rs 100,000. Overall, the data captures a thorough picture of the sample's demographic mixes across multiple categories.

The survey revealed that majority of college students faced problems because of social media, with 74.01% reporting problems and 25.75% expressing no concerns. The most common difficulties identified are distraction (55.45%), cyberbullying and negative feedback (40.84%), addiction and mental health concerns (38.75%), and social comparison and pressure (38.05%). Additionally, respondents were concerned about privacy (31.09%), social isolation (24.36%), and information overload (20.88%). Other minor issues were raised by 0.93 percent of participants. These findings show the problems faced by college students of social media on academic performance.

The survey indicates that while a portion of respondents believed their social media issues could be resolved through appropriate approaches, the majority, comprising 68.91%, acknowledged potential solutions. Conversely, 5.1% disagreed that solutions were feasible. Among suggested remedies, limiting time spent on social media emerged as the most popular option, with 54.99% advocating for it. Other strategies included mindful engagement (35.27%), practicing self-compassion (32.25%), adjusting

privacy settings (26.91%), implementing strict rules against cyberbullying (25.75%), developing effective information filtering strategies (25.52%), and prioritizing offline experiences (24.83%). A small fraction, accounting for 1.39%, proposed alternative solutions. These findings show the managerial solution to overcome the problems faced by college students of social media on academic performance.

In this study 4 direct hypothesis were formed. All 4 hypothesis were supported. Similarly, 2 mediating hypotheses were formulated where both were accepted. Supported Hypothesis 1 indicates that there is significant relationship between Loneliness and Information Overload. This means that when student's feelings of loneliness increase, they are more likely to experience information overload. A similar study by Jabeen et al. (2023) revealed loneliness is significantly associated with information overload among students. A study by MacDonald & Schermer, (2021) also showed positive association between loneliness and information overload. Supported Hypothesis 2 indicates that there is significant relationship between Self-Presentation and Information Overload. This means that students who engage more time on self-presentation activities, such as maintaining a certain image on social media sites, are more likely to feel information overloaded. Some other research by Chua and Chang (2016) and Appel et al., (2020) showed Self-presentation has significant association with information overload. This implies that students who engage more time on maintaining image on social media are more likely to feel information overloaded.

Supported Hypothesis 3 indicates that there is significant relationship between Information Overload and Social Media Addiction. This means that when students are overwhelmed with excessive information through social media platforms, they are more inclined to develop addictions to these sites. The study by Mäntymäki and Islam, (2016) it was previously found that they significantly impact individuals' SMP use and experience with events such as information overloads. Supported Hypothesis 4 indicates that there is significant relationship between Social Media Addiction and Reduced Academic Performance. This means that individuals who exhibit signs of social media addiction are likely to experience a decline in their academic performance. The study by (Boahene et al., 2019) there is significance relationship between Social Media Addiction and Reduced Academic Performance. Malik et al. (2021) study reveals that there is positive relationship between Social Media Addiction and Reduced Academic Performance.

6. Conclusion

College students nowadays are surrounded by a wide variety of technologies in every aspect of their lives. Students and faculty use these emerging technologies and platforms in all aspects of their daily lives, specifically social media, but only a small percentage of users are actively involved in such activities. They use desktop computers, laptops, tablets, and cell phones daily. They also use these devices for text messaging, blogging, content sharing, online learning, and much more. Social media is an important, widely used communication tools for individuals and businesses. However, together with bright side there is the dark side of social media as well which includes the social media addiction and its impact on universities students to be considered.

This study highlights a critical relationship between the academic performance of college students and their engagement with social media platforms, revealing factors that contribute to this adverse effect. Specifically, loneliness and the need for self-presentation emerge as significant influencers, shaping the availability of information and ultimately culminating in information overload. This overload, in turn, becomes a catalyst for social media addiction, leading to the decline in academic performance. Moreover, the research highlights a spectrum of challenges faced by students, ranging from distractions and cyberbullying to negative feedback, addiction, and mental health concerns. In response to these multifaceted issues, potential avenues for mitigation are proposed, emphasizing the importance of strategies such as limiting social media usage, cultivating mindful engagement, and fostering self-compassion. By addressing these underlying factors and implementing proactive measures, educators and stakeholders can strive to create an environment conducive to academic success, safeguarding the well-being and scholarly pursuits of college students in the digital age.

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