


## Moderating Role of Attention Control in the Relationship Between Academic Distraction and Performance


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### Abstract

**Objectives:** The purpose of this study is to examine the influence of social media engagement, which includes frequency of using social media platforms (FSMP) and social media involvement, on the academic distraction and academic performance of the student. The study further tests the moderating role of attention control on the relationship between academic distraction and academic performance.

**Method:** Data were collected from 272 students studying in universities in India. Students answered questions on the frequency of visiting social media platforms and social media involvement, components of academic distraction, and attention control. AMOS software was used to test the structural model.

**Results:** FSMP does not contribute to academic distraction; however, consistent social media involvement does predict academic distraction. Unlike previous studies, academic distraction does not influence the academic performance of students born in the digital era, who have accessed social media throughout their childhood. Attention control moderates the relationship between academic distraction and academic performance.

**Conclusions:** The study challenges past research that claims social media engagement has a negative effect on student academic performance. Social media involvement, such as texting, commenting, and sharing updates, causes academic distraction but may not affect student academic performance. A novel finding is that the strength and direction of the relationship between academic distraction on academic performance vary with attention control.

**Implication for Theory and/or Practice:** The study can be useful for educators and policy makers to build strategies for developing digital citizenship behaviours among students and thereby leverage social media for improved academic achievements of students. In particular, the potential moderating role of

attention control in the interaction between academic distraction and academic performance has implications for educators and researchers.

**Keywords:** *social media, academic distraction, attention control, academic performance*

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## Introduction

Ubiquitous technology and the pervasiveness of personal digital devices have made academic distraction a prime concern for educators. With the changing landscape in media technologies and the increased ease of its use and access, students are more tempted to engage in media multitasking than ever before (Dontre, 2021). New choices of software programs, especially those that aid in communication, allow the integration of some tasks (e.g., chatting) while carrying out other tasks; younger generations report lower difficulty ratings for such multitasking than older generations (Carrier et al., 2009). Use of electronic communication and social media is emotionally gratifying but can impact study time for students (Rosen et al., 2013). Individuals have little awareness or memory of their multiple-media switching behaviour and underestimate their engagement in this by 88% (Brasel & Gips, 2011). Excessive use of social media distracts students from their academic pursuits and negatively affects their academic performance (Giunchiglia et al., 2018), thereby leading to long term negative consequences in their lives and careers (Kuncel et al., 2004).

Online social tools have many educational benefits that include enhanced communication and interaction among students and between students and teachers (Faizi et al., 2013). Having students connect with one another before arrival on campus eases their transition by making them feel like they have access to a more expansive network on campus and helps improve adjustment in college (Baber, 2021; DeAndrea et al., 2012). Social media apps such as WhatsApp make interactions simple and easy for students. Interaction has a positive influence on student learning outcomes and satisfaction in online learning environments (Baber, 2020). Many university lecturers are using online social networking to enhance the teaching and learning experience (Hamid et al., 2015). While social media use promotes collaborative and responsive learning among students, excessive, unwise, or inconsiderate activities in social media can detract them from studies (Emerick et al., 2019) and negatively affect their educational achievements.

In this research, we examine the effect of the FSMP and social media involvement on academic distraction in a sample of students from India. Social media involvement includes four one-way activities that include commenting, posting content, texting, and checking updates from friends. Additionally, it can further include looking for and connecting with new mentors, faculties, and peer learners. Social media involvement may be either two-way synchronized interactions that demand high engagement and prompt reply, such as chatting or instant messaging, or may be one-way interactions that require less commitment and less intensive interactions, such as commenting, posting content, texting, and checking updates from friends (Feng et al., 2019; Lim et al., 2013). The one-way interactions are solely in the control of the user. Students are tempted to catch up with every update and comment or share content. This is further nudged by notifications on their smartphones. Therefore, we hypothesize that the frequency of these four one-way activities has a significant effect on academic distraction and is the root cause of academic distraction and negative impact on student performance, as highlighted in previous studies.

In our study, social media engagement is a combination of two activities—FSMP and social media involvement (SMI). SMI is adding value to the virtual community through commenting, posting content, texting friends, and receiving updates from the network or friends (Lim et al., 2013). We examine whether attention control moderates the relationship between academic distraction and academic performance. Past studies have examined the effect of social media usage on academic distraction and academic performance. However, no other study, to the best of our knowledge, has examined the moderating role of attention control in the relationship between academic distraction and academic performance. The findings of this study will be helpful in developing strategies for identifying and addressing root causes of academic distraction when students use social media while continuing to reap the benefits it offers in education and learning.

## Literature Review

### Social Media Engagement and Academic Distraction

Social media are online platforms that allow users to create a profile, connect with other users, and share and exchange content (Beltran-Cruz & Cruz, 2013; Ryan et al., 2017). Social media usage refers to the frequency of use of various social media platforms; past studies have measured it in terms of number of hours of use in a day or in terms of the number of connections (Feng et al., 2019). Social media platforms like Facebook, Instagram, and WhatsApp provide various online activities, such as chatting, posting, commenting, and following. Some of these activities are two-way interactions, like chatting and video calling, and enable dynamic reciprocity of information that requires high engagement and a prompt reply. Involvement in such activities is not completely in a user's control, as it requires the other user to be available and responsive. On the other hand, these platforms provide one-way interaction activities, including texting, commenting, posting, and checking updates from friends, which require less commitment in terms of timely response and intensity of interactions.

Academic distraction is an observed phenomenon in which a student's ability to perform academic tasks with accuracy and precision is affected by intrinsic and extrinsic factors (Feng et al., 2019). Use of electronic media that includes email, instant messaging (IM), cellular phone communication, social networking sites (SNS), video or online games, television, and movie viewing can distract from academic success while at the same time facilitate social interaction and development of social networks (Jacobsen & Forste, 2011). Controlling and managing the timing and frequency of one-way interaction activities may help in reducing academic distraction for students and minimize the negative effect of social media usage on their academic performance (Feng et al., 2019).

Past research indicates that the level of academic distraction is lower in specific settings, including when students are studying for quizzes or exams or while in study groups or during class time (Beasley et al., 2016). This could be because when students are preparing for such events as quizzes and exams, they are controlling their attention to focus on the event. However, in a day-to-day scenario, students may not exercise such control while engaging with SNS. Several studies have shown that multitasking with technology, especially SNS, decreases both productivity and efficiency in an academic setting (Karpinski et al., 2013).

### Academic Distraction and Academic Performance

When students carry smartphones to lectures, smartphone use can cause academic distraction and affect academic performance (Limniou, 2021). Smartphones have simplified social media involvement activities, including commenting, posting content, texting friends, and receiving updates from the networks. However, research indicates that social media involvement reduces cognition (the mental process of acquiring knowledge and understanding through thought, experience, and the senses), enhances academic distraction, and leads to poor academic performance (Bhandarkar et al., 2021). The frequency of Facebook usage per day

and the number of friends on Facebook have been found to have a direct effect on academic distraction and an indirect effect on academic performance (Feng et al., 2019). Student collaborative learning, student–instructor interaction, and academic distraction impact the relationship between social media use and student academic performance (Cao & Tian, 2020). Students' internet usage data and their behaviour discipline differentiate their academic performance. Xu et al. (2019) found that students who were on the internet for long hours showed lower academic performance and were using it for leisure and pointless surfing. Those who engaged with the internet using strong self-control did so for obtaining study resources and better experiences for academic achievements. Academic distraction could be for other reasons, such as solving a personal crisis or disturbance in life. Thus, the second hypothesis is in line with prior findings that academic distraction negatively affects academic performance.

### **Moderating Role of Attention Control**

When distracted, we may control our attention and bring our focus back to the task or action we are engaged in at any point in time (Gopher, 1993). Voluntary attention control is the ability of humans to adopt a selective attention set and combat interference from irrelevant information (Liu et al., 2009). Activities requiring focused attention, such as reading, are declining among youth, while activities that depend on multitasking, such as using various simultaneous messenger apps, are increasingly making their brains more prone to academic distractibility and a reduced ability to concentrate (Levine et al., 2007). Some studies have found the lack of self-regulation and control of attention to be antecedents to a more severe state of smartphone addiction among users (Mahapatra, 2019). The role of attention control in decreasing academic distraction and improving students' academic achievements has been ascertained in previous studies. Attention control has a critical role in decreasing the negative effect of social media on the academic performance of students (Kokoç, 2021). Attention control is among the significant predictors of academic performance (Dascalu et al., 2017). Perceived attention problems and attention self-regulatory strategies influence academic distraction and academic performance among students (Wu & Cheng, 2019). However, additional cognitive resources are required for attention control (Camerini & Marciano, 2020). Meditation helps with attention control and emotion regulation, which are important components of self-regulation, both of which positively affect academic performance (Tang et al., 2014). Attention control is a significant predictor of academic performance beyond academic self-efficacy (Diehl et al., 2006). Working memory and attention control are explicitly linked and are strong predictors of academic performance (Hitchcock & Westwell, 2017). Thus, we hypothesize that attention control will reduce the negative effect of academic distraction on academic performance.

## **Problem, Purpose of the Study, Research Questions, and Hypotheses**

### **Problem**

Social media, equipped with artificial intelligence, releases hyper-personalized notifications that frequently cause distraction while doing daily activities, including study time for students (Garg & Pahuja, 2020). Studies indicate that the ability to stay focused and manage attention is critical for effectiveness of study time both inside and outside of class. Attention control has a positive effect on academic performance, and the scope and control of attention are distinct contributors to intelligence (Cowan et al., 2006). Scope of attention and control of attention are used as distinct cognitive aptitude measures for students. Scope of attention refers to the individual's capacity in simple working memory tasks and is distinct from one's ability to control attention. Cowan et al. (2006) conducted experiments in children and adults and found that in the case of adults, both measures had distinct and significant effects on academic performance. Numerous studies conducted in various parts of the world have consistently found that social media usage has a negative effect on students' academic performance. Technology use has grown, and use of internet and social media affect

student academic performance. This has been found in studies in Saudi Arabia (Alwagait et al., 2015), Ghana (Bernard & Dzandza, 2018; Bitherman & Frempong-Kore, 2021), Nigeria (Asemah et al., 2013), and India (Rithika & Selvaraj, 2013), among others (Al-Menayes, 2015; Bhandarkar et al., 2021; Cao & Tian, 2020). At the same time, social media has been acknowledged as a new way to share information and learn, and some studies claim that there is no relationship between social media engagement and academic achievement (Amin et al., 2016; Lau, 2017).

## Purpose of the Study

We advance past research by specifically examining the effect of social media engagement on academic distraction and further on academic performance in a sample of students from India. We focus on the effect of four one-way less intensive social media engagement activities, including commenting, posting content, texting, and checking updates from friends. These activities can be controlled and managed by the student for effective use of social media without causing academic distraction. The study also examines the moderating effect of attention control in the relationship between academic distraction and academic performance. The overall research question involves understanding the relationship between attention control, social media engagement (including frequency and involvement), and academic performance. The following hypotheses supporting the research question were evaluated.

*H1a*: Frequency of using social media platforms predicts academic distraction.

*H1b*: Social media involvement predicts academic distraction.

*H2*: Academic distraction predicts academic performance.

*H3*: Attention control moderates the relationship between academic distraction and academic performance.

## Method

### Instrumentation

An online questionnaire was prepared with six sections. The first section captured the demographic information of the respondents, including gender, age, and education. Subsequent sections captured variables of four constructs, namely FSMP, social media involvement (SMI), academic distraction (AD), and attention control (AC), as shown below. The items for these constructs were adopted from past studies (Feng et al., 2019). These are described below. The last section captured the student's GPA score as a measure of his/her academic performance.

#### Frequency of Using Social Media Platforms (FSMP)

FSMP measures the frequency of use of three social media platforms: Facebook, Instagram, and WhatsApp. The scale includes three items using a 5-point Likert scale to rate from 1 (low usage) to 5 (high usage). The students were asked to rate the frequency of use of each social media platform, all of which are popular in India. Cronbach's alpha was 0.89 for the construct.

#### Social Media Involvement (SMI)

SMI measures the involvement of four less intensive one-way interaction social media activities, including commenting, posting content, texting, and checking updates from friends. The scale includes four items using a 5-point Likert scale from 1 (low involvement) to 5 (high involvement). Students were asked to rate the frequency of the following four social media involvement activities on the scale to get the score for social media involvement: commenting, posting content, texting, and reading updates from friends. Cronbach's alpha for the scale was 0.71.

**Academic Distraction (AD)**

AD is an observed phenomenon in which ability to perform academic tasks with accuracy and precision is affected by intrinsic and extrinsic factors. The construct is adapted from previous studies (e.g., Feng et al., 2019). The scale includes three items to measure academic distraction of the student using a 5-point Likert scale with ratings ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Items include (a) When I use social media in high volume, I get distracted from my academic activities; (b) Whenever I am studying, I usually check my social media apps regularly; and (c) I get distracted during my academic activities when I get notifications on any social media. Cronbach's alpha for the construct was 0.71.

**Attention Control (AC)**

AC measures the ability to control attention. The items of the construct are adapted from previous studies (e.g., Luszczynska et al., 2004). The scale includes three items using a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Items include (a) I can concentrate on one activity for a long time, if necessary; (b) If I am distracted from an activity, I do not have any problem coming back to the topic quickly; and (c) I stay focused on my goal and do not allow anything to distract me from my plan of action. Cronbach's alpha score was 0.70.

**Academic Performance (GPA)**

Academic performance was measured based on the student's self-reported GPA from the last semester they attended. It was collected as interval data with following options: < 6; 6–6.9; 7–7.9; 8–8.9; and > 9. The intervals were decided based on the average scores of students.

**Data Collection**

Data were collected from a web-based survey using Google forms. The study required no information that was sensitive by nature. The proposed interactions were brief and did not have the potential to create any lasting impact on the respondents. The study qualified for the ethics board approval exemption criteria and was thus approved. The link for the Google form was circulated to students in two colleges through their teachers in the National Capital Region of India using the WhatsApp messenger app. Both colleges provide education in diverse streams, including science, liberal arts, engineering, and management. Snowball sampling was used, as students were encouraged to forward the survey to their friends studying in other Indian colleges. The students were sent an email informing them about the study being conducted for their voluntary participation by responding to the survey.

**Statistical Analysis**

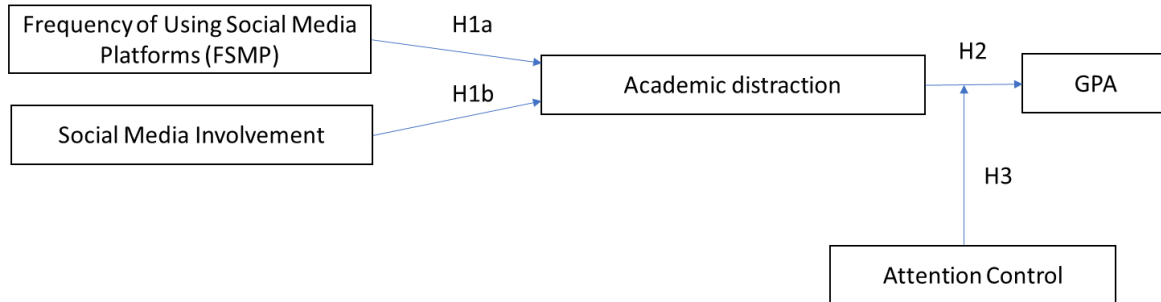
Data were analysed using SPSS V22; to confirm the structural model, AMOS software was used. Kaiser-Meyer-Olkin (KMO) and Bartlett's tests of sampling adequacy were used to verify whether the data set was appropriate for factor analysis. KMO must be equal to or greater than 0.5 (Leech et al., 2013). Bartlett's test of sphericity suggests the significant differences in the properties of the identity matrix and correlation matrix. If the probability value of this test is less than 0.05, it shows a significant difference in the properties of the correlation matrix and identity matrix, which is desirable.

To evaluate fit of the confirmatory model, confirmatory factor analysis (CFA) was completed using structural equation modelling (SEM). Hooper et al. (2008) suggested the following criteria for assessing model fit; Chi-square ( $\lambda^2/DF = 2-3$ ,  $P > 0.05$ ); adjusted goodness-of-fit index (AGFI) greater than 0.80; goodness-of-fit index (GFI) greater than 0.90; comparative fit index (CFI) greater than .90; root-mean-square residuals (RMSR) less than 0.10; root mean square error of approximation (RMSEA) less than .08; normed fit index (NFI) greater than 0.90; ; Tucker-Lewis index (TLI ) greater than 0.90; and parsimony normed fit index (PNFI) greater than 0.60.

### Research Model

The research model, aligned with the study hypotheses, is shown in Figure 1 below.

**Figure 1.** Research Framework



### Results

Reliability of the items was evaluated using Cronbach’s alpha. All values were above the acceptable value of 0.7, which is recommended (Hair et al., 2019). Table 1 lists values for alpha for each of the four constructs.

**Table 1.** Reliability Analysis

Dimensions	Items	Cronbach’s Alpha
AC	3	0.704
AD	3	0.705
SMI	4	0.714
FSMP	3	0.878

### Demographic Profile

We received 316 total responses; however, after scrutinization, 272 were selected for analysis. The remaining data from 44 was not considered in further analysis due to significant missing information. The demographic profile of the respondents is shown in Table 2. The sample was mostly female (58.5%), young (85.3% were between 18 and 30 years of age), and 51.8% were undergraduate students. Given that 18 through 30 is the age group of traditional college students, it was important to separate those in the traditional age, who make up more of the student body, from older returning students.

**Table 2.** Profile of Respondents

Demographic Items	Frequency	Percentage
<i>Gender</i>		
Female	159	58.5%
Male	113	41.5%
<i>Age</i>		
Between 18 and 30	232	85.3%
30 and more	40	14.7%
<i>Education</i>		
Undergraduate	141	51.8%
Graduate	62	22.8%
Doctorate	41	15.1%
Post-Doc	28	10.3%

**Factor Analysis**

The KMO value was 0.72, and Bartlett’s test is significant ( $p < .001$ ); both indicate that it was appropriate to conduct the factor analysis (Bartlett, 1954). Principal component analysis is used with Varimax rotation for this study. A total of four groups of items were categorized. For all items factor loading is greater than 0.60 as in Table 3, which is reasonable and considerable (Kaiser, 1974).

**Table 3.** Principal Components Analysis

Items	Question text	FSMP	SMI	AD	AC
FSMP1	Facebook use	0.843			
FSMP2	Instagram use	0.908			
FSMP3	WhatsApp use	0.869			
SMI1	Commenting		0.730		
SMI2	Posting Content		0.668		
SMI3	Texting		0.744		
SMI4	Reading updates from friends		0.714		
AD1	When I use social media in high volume, I get distracted from my academic activities			0.817	
AD2	Whenever I am studying, I usually check my social media apps regularly			0.771	
AD3	I get distracted during my academic activities when I get notifications on any social media			0.771	
AC1	I can concentrate on one activity for a long time, if necessary				0.811
AC2	If I am distracted from an activity, I do not have any problem coming back to the topic quickly				0.771
AC3	I stay focused on my goal and do not allow anything to distract me from my plan of action				0.785



### Model Test

The overall model demonstrated excellent fit to the data. Chi-square ( $\lambda^2/df$ ) = 1.406,  $p > 0.05$ );  $AGFI = 0.94$ );  $GFI = 0.96$ ;  $CFI = 0.98$ ;  $RMSR = 0.05$ ;  $RMSEA = 0.039$ ;  $NFI = 0.93$ ;  $TLI = 0.97$ ); and  $PNFI = 0.68$ . Hypothesis H1a, FSMP predicts academic distraction, was not supported,  $\beta = -.05$ ,  $p > .05$ . Hypothesis H1b, social media involvement predicts academic distraction, was supported,  $\beta = .45$ ,  $p = .009$ . Hypothesis H2, academic distraction predicts academic performance, was not supported,  $\beta = .08$ ,  $p > .05$ . Finally, hypothesis H3, the interaction term multiplying attention control by academic distraction was significant ( $\beta = 0.167$ ,  $p < 0.05$ ) in Table 4. It indicated that attention control exerted a moderating effect on the relation between academic distraction and academic performance. Figure 2 provides a visual of the overall model and coefficients.

**Table 4. Structural Model Coefficients**

Hypotheses*	Path Relationship**	$\beta$	$p$	Decision
H1a	FSMP <-> AD	-0.054	0.332	Rejected
H1b	SMI <-> AD	0.447	0.009	Supported
H2	AD <-> GPA	0.081	0.494	Rejected
H3	AC*AD (Moderating) GPA	0.167	0.017	Supported

**\*Hypotheses H1a, H1b, H2, H3 statements**

*H1a:* FSMP predicts academic distraction.

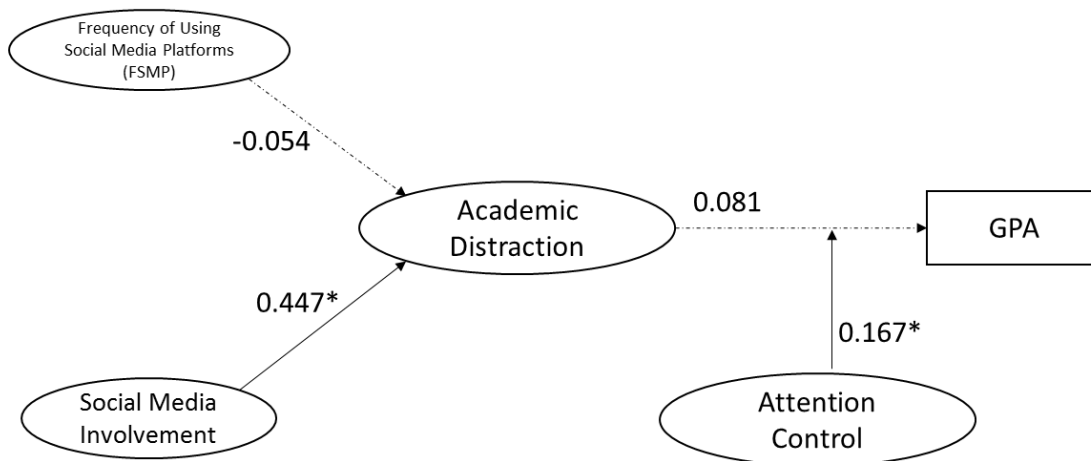
*H1b:* Social media involvement predicts academic distraction.

*H2:* Academic distraction predicts academic performance

*H3:* Attention control moderates the relationship between academic distraction and academic performance

\*\* FSMP—Frequency of social media platform use; AD—Academic distraction; SMI—Social media involvement; AC—Attention control; GPA—Grade point average

**Figure 2. Structural Model**

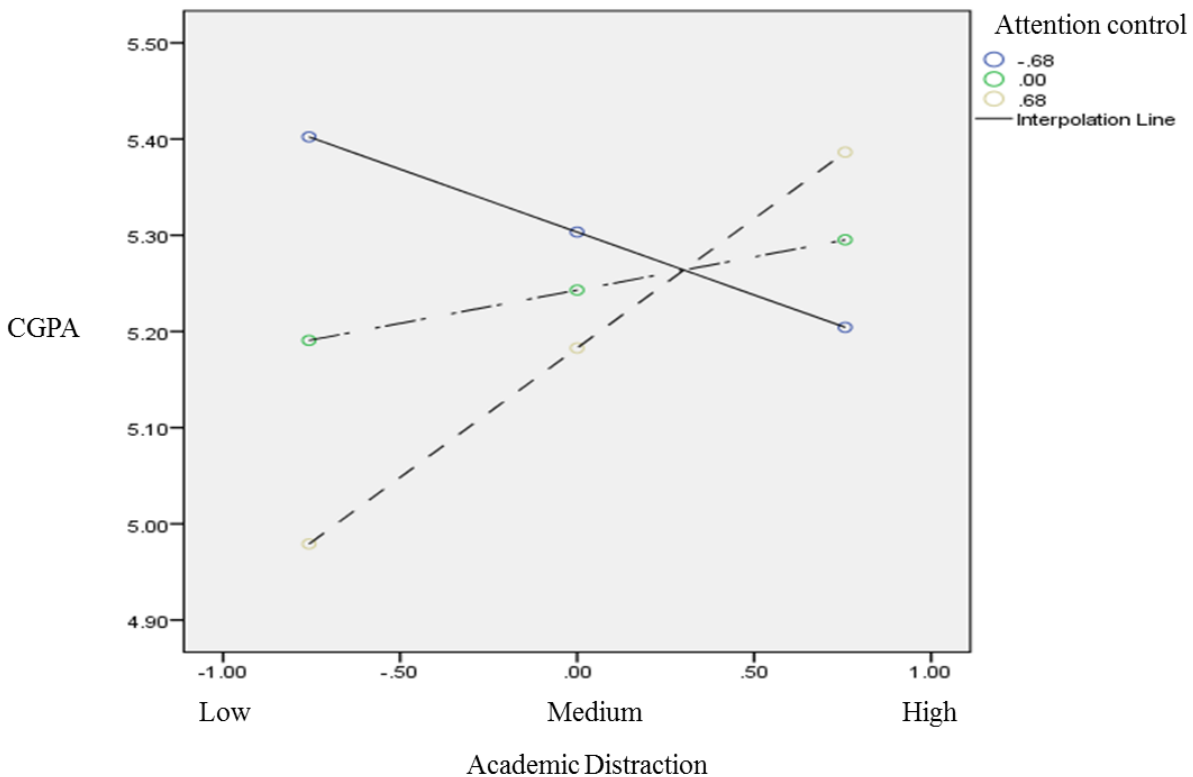


**Note:** \*Significant  $p < .05$

Results of the moderating effect are presented graphically in Figure 3. To see the pattern of meaningful interaction, we classified attention control into low (-0.68), medium (0.00), and high (0.68) groups to examine the average change. The higher (0.68) the attention control, the stronger the relation between academic distraction and academic performance became. The graph (see Figure 3) shows that the interaction

between attention control and distraction has a significant effect on GPA score only when the level of attention control is above 0.68. This means that if one exhibits a high level of attention control, even high distraction will not affect the student’s grades. However, at lower levels of attention control, interaction between attention control and distraction does not influence the GPA score. Thus, it is interesting to find that with an appropriate level of attention control, higher distraction actually may not negatively impact the GPA as it was perceived.

**Figure 3.** Moderating Effect of Attention Control on the Relationship Between Academic Distraction and Academic Performance



## Discussion

The results of this study suggest that social media involvement, including texting, posting, and commenting, can cause academic distraction, but attention control ability can predict increased GPA. While not all hypotheses were supported in the model, overall fit was excellent. The finding that students engaging in activities like texting, commenting, and updating predicted distraction is in alignment with previous studies that have found social media use to cause academic distraction among college youth (Beasley et al., 2016; Cao & Tian, 2020; Dontre, 2021; Feng et al., 2019). Our finding that attention control moderates the negative effect of social media on GPA is also in alignment with past studies that have highlighted the importance of attention control for academic achievements (Kokoç, 2021).

Other studies have highlighted the benefits of using social media in modern-day learning for students (Emerick et al., 2019; Faizi et al., 2013; Lin & Kwantes, 2015). To understand the distinct impact of the diverse ways students engage in social media, we created two separate constructs of media distraction, which extends findings from past studies. The model used in this study explains mixed findings from past research. Although social media engagement may cause distraction and impact academic performance, if students manage their

attention and channel use of social media for productive purposes, it can have a positive effect on their academic performance. The present study establishes the interaction effect of academic distraction and attention control on students' academic achievement.

### **Theoretical Implications**

Social media provides college students another opportunity to make friends and provides a good way to release pressure (Wang et al., 2011). Social networking media serves a purpose to connect students who might not have had the opportunity to otherwise meet (Mishra et al., 2015). Many contemporary college students are digital natives, having been born in the digital era and exposed to technologies since birth. When examining the college students' own perspective on the subject, we found that they admit being used to social media use; however, at the same time, they also perceive that constantly involving and checking social media has a negative effect on their mood (Wang et al., 2015). With appropriate support and guidance from parents and teachers both in school and college, students' use of social media can be channeled to leverage it as a powerful medium for not just academic achievements but also for life-long learning. Findings from the present study make us ponder if there is such thing as academic distraction due to social media anymore, given the digital natives in the student community.

We found no significant impact of academic distraction on academic performance. We also found a significant moderating effect of attention control. Since the sample is skewed with more digital natives, we ponder if the new generation of students born in the digital era are better with attention control and, therefore, the academic distraction caused by social media involvement does not affect their academic performance. This could be verified by extending the study to larger samples of digital natives. Further studies can also compare the model using multigroup analysis with larger samples of students who are not digital natives. The majority (85%) of our sample is constituted of digital natives, and, in line with the evolution concept of Homo Zappiens in other studies (Veen, 2007; Veen & Vrakking, 2006), it seems that students today have evolved and are able to manage their attention to not just multitask on social media but to not let it affect their academic performance. However, testing this on larger samples in future studies will be useful to verify this finding.

Given its ubiquitous presence and increasing relevance in the world, social media is here to stay. Numerous studies globally have been conducted to evaluate the effects of social media use on the mental health of students (Abi-Jaoude et al., 2020; Bashir & Bhat, 2017; Berryman et al., 2018; Coyne et al., 2020; Naslund et al., 2020; O'Reilly et al., 2018). However, the benefits far outweigh concerns, thereby making it imperative for all to learn effective use of social media. At a time when organizations are striving to build digital dexterity by training employees to effectively use social media platforms and develop a digital mindset (Soule et al., 2016), contemporary students bring these skills, which come naturally to them. The unique contribution of this study is the empirical distinction it brings between frequency of social media use and social media involvement and their distinct effect on academic distraction and academic performance.

While the frequency of social media platform use was not related to academic distraction of students, social media involvement is related to academic distraction. This may be because one-way social media involvement activities, like texting, commenting, posting content, and reading other people's updates, are solely in the user's control. While students may be actively logged in to the social media websites at a specific and planned time when using it productively, the advanced notification features of social media platforms and handheld smartphone devices, the increasing number of social media platform users, and the temptation to catch up with every update drives social media involvement throughout the student's waking hours, thereby causing academic distraction. Thus, we advance research on this subject by bringing a new perspective to challenge past research and stereotypical beliefs regarding social media usage.

## Practical Implications

The findings from this study indicate that if students can be educated, and social media platform use is channeled for enhanced learning, it can lead to improved academic performance. Educating students about digital mindfulness and ethical and productive use of social media enables their proper digital citizenship (Damico & Krutka, 2018; Forbes, 2017; Kind et al., 2010). Schools and colleges must organize educative sessions for students and their parents on digital mindfulness, digital citizenship, and ethical and productive use of social media. For example, yoga and meditation can help build attention management skills in students (Fiebert et al., 1981; Harrison et al., 2004; Luxhman et al. 2021). While most schools are organizing sessions on these subjects in India, their importance and effectiveness can be improved.

## Limitations and Future Research

The sample for the study is drawn from two colleges in the national capital region of India; thus, there could be a potential bias in the sample. This relatively small sample may suffer from non-response bias. Since the sample size of this study was small and skewed with more digital natives, we recommend further studies to test the model on new and extended samples. The study triggers an interesting hypothesis to examine attention control more closely among digital natives. With increased sample size of students who are not digital natives, future studies can compare model fit between digital native students and non-digital native students using multigroup analysis and determine if the same moderating relationship holds. The present study brings out a novel distinction between frequency of social media involvement activities and frequency of overall social media platform use for the first time and finds that they have distinct effects on student academic achievements. We find this interesting to advance research on the subject. Future studies can examine the correlations between these two constructs as well. The constructs can be further used to examine the impact of other variables like the student's age, education levels, and gender in the phenomenon. For instance, doctorate and post-doctorate students are likely very different from undergraduates in terms of social media usage as well as abilities in attention control.

## Conclusion

Social media is here to stay and offers new ways of sharing and learning collaboratively. The benefits of using social media outweigh the concerns associated with its usage. The scale and reach for building a network of people to collaborate and learn now seems unimaginable without social media. There have been mixed findings with respect to social media use and its effect on academic performance of students in past research. While a majority claimed that it has a negative effect on academic performance, others have claimed that social media use benefits student academic achievements. The present study brings attention control as a new variable in the discussion and establishes evidence for the moderating role of attention control. If students are educated about attention control and digital citizenship behaviours, they can leverage social media to enhance their academic achievements as well as lifelong learning.

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