

# The Impact of Instagram Addiction on Academic Performance: The Mediating Role of Procrastination among University Students

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## ABSTRACT

The increasing integration of Instagram into students' daily lives has raised concerns regarding its impact on academic behavior and performance. This study examines the relationships among Instagram addiction, Instagram entertainment, procrastination, and academic performance among management students in Gujarat. Data from 285 respondents were analyzed using Partial Least Squares Structural Equation Modelling (PLS-SEM).

The findings indicate that Instagram addiction significantly increases procrastination, whereas Instagram entertainment does not have a significant effect. Procrastination does not mediate the relationship between Instagram use and academic performance. However, Instagram addiction shows a direct negative association with academic performance. The study highlights the importance of digital self-regulation and balanced social media use to protect students' academic productivity.

**Keywords:** Instagram addiction, Social media use intensity, Procrastination, Academic performance, PLS-SEM, University students.

## INTRODUCTION

The unprecedented growth of digital communication technologies has reshaped patterns of social interaction, information exchange, and learning behavior across the globe. Among contemporary social networking platforms, Instagram has emerged as one of the most influential visual-based applications, particularly among university students. By enabling instant photo and video sharing, interactive engagement, entertainment consumption, and social networking, Instagram has become deeply embedded in the daily routines of young adults. Its algorithm-driven features—such as reels, stories, likes, comments, and personalized feeds—encourage continuous engagement, thereby increasing the intensity of usage. While the platform offers opportunities for creativity, self-expression, and digital connectivity, concerns have grown regarding its excessive and potentially addictive use.

In higher education contexts, students increasingly integrate Instagram into both their academic and personal lives. On one hand, the platform supports peer communication, collaborative learning, and information dissemination. On the other hand, prolonged and uncontrolled use may disrupt concentration, reduce time available for academic tasks, and contribute to behavioral outcomes such as procrastination. The immersive nature of visual content, combined with instant gratification mechanisms (e.g., likes and notifications), may foster habitual checking behavior and psychological dependence (Joshi & Vaghela, 2018). Consequently, scholars have begun to examine Instagram addiction as a distinct form of social media addiction, characterized by compulsive use, withdrawal symptoms, mood modification, and interference with daily responsibilities.

Procrastination, defined as the voluntary delay of intended academic tasks despite foreseeable negative consequences, has been consistently linked with excessive social media engagement. The ease of access to entertainment content and social interaction on Instagram may divert students' attention from academic commitments, thereby influencing productivity and performance outcomes. Academic performance, typically reflected in grade point average (GPA), engagement levels, and overall learning achievement, represents a critical indicator of student success. Understanding how Instagram addiction and entertainment motives contribute to

procrastination, and subsequently affect academic performance, is therefore of substantial theoretical and practical importance.

Given the rapid digitalization of education and the growing dependency on social networking platforms among youth, there is a pressing need to systematically investigate the behavioral and academic implications of Instagram use intensity. This study seeks to examine the interrelationships among Instagram addiction, Instagram entertainment, procrastination, and academic performance among management students in higher education. By employing Partial Least Squares Structural Equation Modelling (PLS-SEM), the research aims to provide empirical insights into whether procrastination mediates the relationship between Instagram usage patterns and academic outcomes. The findings are expected to contribute to the expanding body of literature on social media behavior, digital well-being, and student academic productivity, while offering practical implications for educational institutions and policymakers.

## **LITERATURE REVIEW**

In recent years, the rapid expansion of social media platforms, particularly Instagram, has significantly transformed the daily lives of university students. With its features enabling instant communication, entertainment, content sharing, and social interaction, Instagram has become one of the most frequently used digital platforms among young adults. While social media offers opportunities for networking, information exchange, and self-expression, growing scholarly attention has focused on its potential negative consequences, especially in relation to addictive usage patterns, procrastination behavior, and academic performance. As students increasingly integrate social media into their academic and personal routines, understanding the interplay between Instagram addiction, entertainment motives, procrastination, and academic outcomes has become an important area of research in education and behavioral studies.

### **Instagram Addiction**

Existing literature highlights the growing concern of social media addiction, particularly Instagram, among university students. Behzad Foroughi et al. (2021) found that recognition, social, and entertainment needs significantly predict Instagram addiction, which negatively affects academic performance and increases depression and anxiety. Nazir S Hawi and Maya Samaha (2017) reported that addictive social media use reduces self-esteem and life satisfaction. Similarly, Damola Olugbade (2023) observed that 66% of students perceived social media addiction as detrimental to academic performance. Lutz Wartberg et al. (2021) linked problematic social media use with impulse-control difficulties and procrastination. Collectively, these studies suggest that Instagram addiction directly impairs academic engagement, emotional well-being, and productivity.

H1: Instagram addiction has significant positive influence on procrastination.

### **Instagram Entertainment**

Instagram is widely used for entertainment and time-passing purposes. Kagan Kircaburun et al. (2020) found that entertainment motives significantly predict problematic social media use. Joe Phua et al. (2017) emphasized that Instagram usage enhances social capital but varies depending on user motives. Chiwetara Lotanna Jideonwo (2019) revealed that while students derive satisfaction from Instagram, excessive engagement may lead to emotional distress. However, some studies (e.g., Closson & Bond, 2019) indicate that Instagram may also support university adjustment when used moderately. Thus, entertainment-based usage may not always be harmful unless it becomes excessive or addictive.

H2: Instagram entertainment has significant positive influence on procrastination.

### **Procrastination**

Procrastination has consistently been linked with excessive social media use. Jingyu Geng et al. (2018) found that internet addiction positively predicts procrastination, mediated by self-control deficits. Dmitri Rozgonjuk et al. (2018) demonstrated that smartphone addiction and social media use in lectures mediate procrastination behavior. Ayman Gamal Khalifa (2021) reported that social networking addiction increases academic procrastination and reduces quality of academic life. Similarly, Astuti & Ariyanie (2023) confirmed that higher social media intensity

significantly increases academic procrastination. These findings position procrastination as a key behavioral outcome of social media addiction.

H3. Procrastination has significant negative influence on academic performance.

H4: Procrastination significantly mediated the relationship between various antecedents and Academic Performance.

### **Academic Performance**

Numerous studies establish a negative relationship between excessive social media use and academic outcomes. Onur Sapci et al. (2021) found that each additional hour of smartphone use reduces GPA significantly. Jie Zhuang et al. (2023) showed that social media addiction negatively affects academic engagement through poor sleep and fatigue. Yalın Kılıç Türel (2022) confirmed that academic procrastination mediates the relationship between media usage and academic achievement. However, some research (Kaleem et al., 2023) reported no direct association between addiction and academic performance, indicating contextual variations.

The existing literature strongly supports a significant association between social media addiction, procrastination, and academic performance among university students. Studies consistently show that Instagram addiction, driven by social, recognition, and entertainment needs, negatively influences academic engagement, sleep quality, and psychological well-being. While Instagram entertainment may enhance social interaction and adjustment when used moderately, excessive use often leads to procrastination and reduced productivity. Procrastination emerges as a critical behavioral mechanism linking social media addiction with declining academic performance. Although some findings indicate contextual differences, the overall body of evidence suggests that problematic Instagram use poses risks to students' academic success, highlighting the importance of digital self-regulation and balanced media consumption.

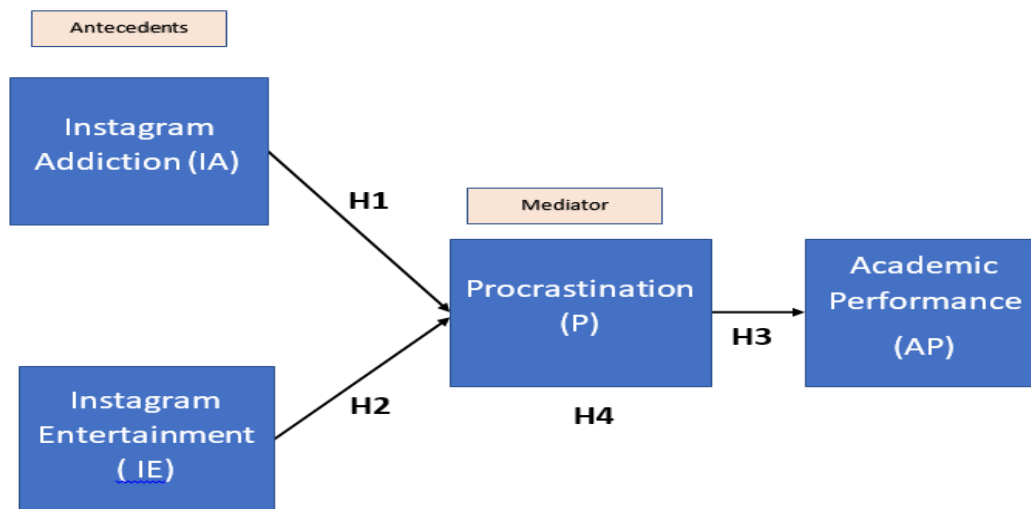
### **RESEARCH METHODOLOGY**

The ideal sample for this study consists of adults (above 18 years) and well-educated user (higher education). Adults, particularly those engaged in higher education, possess greater analytical ability to evaluate their behavioral patterns, time management practices, and academic responsibilities in relation to social media usage. For this purpose, adults have attributed a greater ability to compare and evaluate Instagram usage. Indeed, as digital media literature suggests that highly educated individuals demonstrate a stronger capacity to critically assess the implications of technology usage on productivity and performance outcomes. Therefore, we collected data from a sample of highly educated management consumers. The study used non-probability convenience sampling methods.

The data were collected from the students of a management institute of higher education in Gujarat through the online questionnaire survey. Before sending the questionnaire, a pilot study was conducted to check the stability and validity of the questionnaire. After considering the suggestion from the pilot survey, some wordings were refined in the questionnaire to make it more understandable.

The questionnaire was sent to the students using the institute group administrative approach in December 2025. The total population of management students 400 questionnaires were distributed among the target population using the group administration approach. After two weeks, a reminder email was sent as a follow-up. A total of 310 responses were returned, but only 285 valid responses were considered in the study excluding incomplete responses and extreme outliers. Received 285 responses which indicates a good response rate of 71.25%; as per (Holtom, 2008).

Figure – 1 Propose Research Model



### Measures

The scales were adopted from relevant previous researchers and the first draft of the questionnaire was prepared. The measurement of the construct of Instagram addition, Instagram Entertainment, Procrastination and Academic Performance were based on the validated measurement of previous literature available on social media addition. Thirteen items measuring Instagram addition were adopted from Karolina Koc-Januchta, Beata Pawłowska, and Andrzej Potembski which is Originally published in 2014 as the *Facebook Intrusion Questionnaire*. Procrastination was measured on the seven-point Likert scale adopting six items from Clarry Lay developed the General Procrastination Scale (1986) to measure trait procrastination. Instagram entertainment was measured using ten items adapted from the Passive and Active Social Media Use Scale (Gagnon et al., 2019). For academic performance consider students' academic records and Fredricks Blumenfeld & Alison Paris, 2004 – student engagement & academic outcomes research. As these scales were initially developed in another cultural context, the scales were cautiously revised and reproduced. To do the same, three professionals dealing in sustainable products and two professors teaching marketing were given the questionnaire to evaluate the content and face validity. They also assessed each item for specificity, representativeness, and precision. The suggestions given by them were objectively incorporated. Responses on all the scale items were recorded on a seven-point Likert scale ranging from 1 (Strongly disagree) to 7 (Strongly agree).

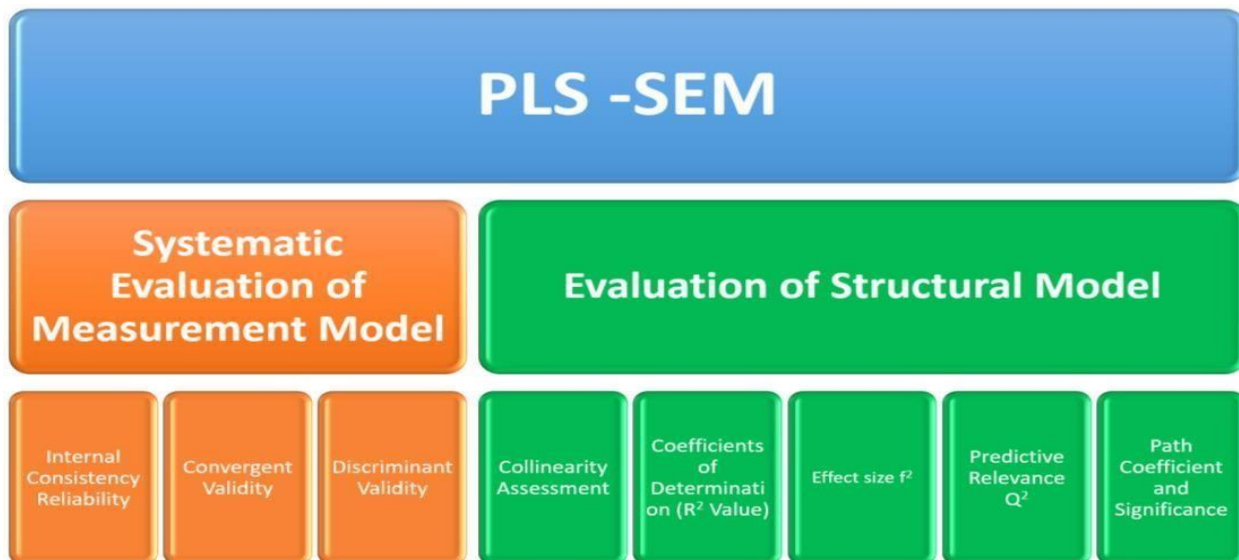
## RESULTS AND DISCUSSION

### Descriptive Statistics

Out of 285 respondents, The majority of the respondents were female (62 per cent) with males constituting (38 per cent) of the sample. With regards to the average age of the respondents was 21 years old. As to annual family income (in Rupees), 57 per cent of the respondents' income is less than 2,50,000, 29 per cent of respondents' income belongs to 2,50,000 to 5,00,000, only 26 per cent and 15 per cent respondents' received 5,00,000 to 10,00,000 and above 10,00,000 incomes respectively.

### Purification of Scales

Churchill (1979) suggested that removing items with corrected –item-total-correlation (CITC) scores is essential before conducting exploratory factor analysis. Cristobal et al. (2007) proposed a cut-off point of 0.30 to remove an item. Based on the analysis, it was found that the CITC score of the all the items were above the cut-off point so no item were removed at this stage.



**SYSTEMATIC EVALUATION OF MEASUREMENT MODEL**

**Internal Consistency Reliability**

Composite Reliability (CR) and Cronbach's Alpha are indicators of internal consistency reliability. They assess the extent to which the observed indicators reliably measure their underlying latent constructs. Values above 0.7 are considered acceptable for both CR and Cronbach's Alpha. A commonly accepted standard for interpreting internal consistency using Cronbach's alpha is: >0.90 = Excellent, <0.90 and >= 0.80 = Very good, <0.80 and >= 0.70 = Good, <0.70 and >= 0.60 = Acceptable, <0.60 and >= 0.50 = Poor, <0.50 = Not acceptable (Cronbach, 1951; Nunnally, 1978). Below table 1 enumerates the values as per Cronbach's  $\alpha$  for each item ranging from 0.901 (Instagram Entertainment) to 0.949 (Instagram Addiction).

**Table 1: Internal Consistency Reliability**

Construct	Cronbach's Alpha	Composite Reliability
Instagram Addiction (IA)	0.949	0.950
Instagram Entertainment (IE)	0.901	0.905
Procrastination (P)	0.945	0.947

**Convergent Validity:**

The degree to which one measure positively correlates with another measure of the same construct is known as convergent validity. In order to determine the convergent validity, PLS- SEM takes into account the value of the outer loading of the indicators and the AVE.

**Factor Loading:**

The entire contribution of an item to its assigned construct is determined by factor loading, sometimes referred to as outer loading in PLS-SEM. They are estimated relationships in reflective measurement models and are shown as arrows from the latent variable to its indicators. Retaining an item outer loading greater than 0.708 is advised, according to Lohmöller (1989), since it is thought that the latent variables can account for at least 50% of the variance in the indicator. The goods with loadings of 0.40, 0.50, 0.60, and 0.70 can also be accepted if the value of AVE is more than 0.50.

**Average Variance Extracted:**

In terms of measurement error, Fornell & Larcker (1981) define average variance extracted (AVE) as a measure of the amount of variance identified by the link between a concept. AVE stands for average variance in indicator variables that a construct can explain. It is similar to the ratio of variance explained in EFA. For AVE to have adequate convergent validity, its value should be greater than 0.50 and range from 0 to 1. (Bagozzi & Yi, 1988; Fornell & Larcker, 1981; Joshi & Joshi, 2020).

**Table : 2 Outer loading and AVE**

	AP	IA	IE	P	AVE
AP	1.000				
IA1		0.804			0.737
IA2		0.820			
IA3		0.874			
IA4		0.837			
IA5		0.882			
IA6		0.883			
IA7		0.883			
IA8		0.881			
IE1			0.740		0.718
IE2			0.840		
IE3			0.910		
IE4			0.870		
IE5			0.867		
P1				0.832	0.784
P2				0.881	
P3				0.887	
P4				0.910	
P5				0.909	
P6				0.902	

It is evidently visible from the above table that AVE value of all the constructs is well above the cut-off criteria of 0.50. In short, all the outer loading and AVE values are satisfying the cut-off criteria so it can be noted that the model has achieved the convergent validity.

**Discriminant Validity:**

Discriminant validity examines a construct's uniqueness by confirming the degree to which it differs from other constructs. To assess discriminant validity, three criteria—the HTMT ratio, cross loading, and Fornell & Larcker

criterion—should be examined.

**Fornell & Larcker**

The correlation between latent constructs and the square root of the extracted average variance (AVE) is compared using the Fornell & Larcker criterion. When compared to the variance of other latent constructs, a latent construct should be better able to describe the variation of its own indicator. Thus, the square root of each construct's AVE should be greater than its greatest significant correlation with any other construct, in accordance with the Fornell & Larcker criterion (Fornell & Larcker, 1981).

**Table: 3 Correlation between constructs**

	AP	IA	IE	P
AP				
IA	0.074			
IE	0.089	0.861		
P	0.074	0.694	0.577	

**Cross Loading:**

To assess the cross loading, it should be noted that the outer loading of associated construct should be larger than all of its loading on other constructs. The outer loading value of assigned construct less than the its loading with other constructs is a sign of lack of discriminant validity.

**HTMT:**

Heterotrait-monotrait (HTMT) ratio of correlation is one more measure of discriminant validity. Henseler, Ringle & Sarstedt, (2015) found that HTMT can realise greater sensitivity and specificity rates (97% to 99%) as compared to Fornell-Lacker (20.82%) and the cross-loadings criterion (0.00%). The value of HTMT should be less than 0.9 at 95% confidence interval, as value close to 1 specifies lack of discriminant validity (Henseler et al., 2015).

**EVALUATION OF STRUCTURAL MODEL**

**Collinearity test:**

The connection between independent (predictor) variables in a regression model that expresses a linear relationship is known as collinearity in statistics. If the predictor variables in the same regression model are correlated, they cannot independently predict the value of the endogenous variable. Stated differently, they explain a portion of the same variance in the dependent variable, hence decreasing their statistical significance one after the other. A strong correlation between two indicators is known as collinearity. In order to confirm the collinearity, the value of variance inflated factor (VIF) is examined. Values of VIF greater than three, as reported by Diamantopoulos and Siguaw (2006), and greater than five, as reported by Hair, Ringle, and Sarstedt (2011), suggest the possibility of a collinearity issue.

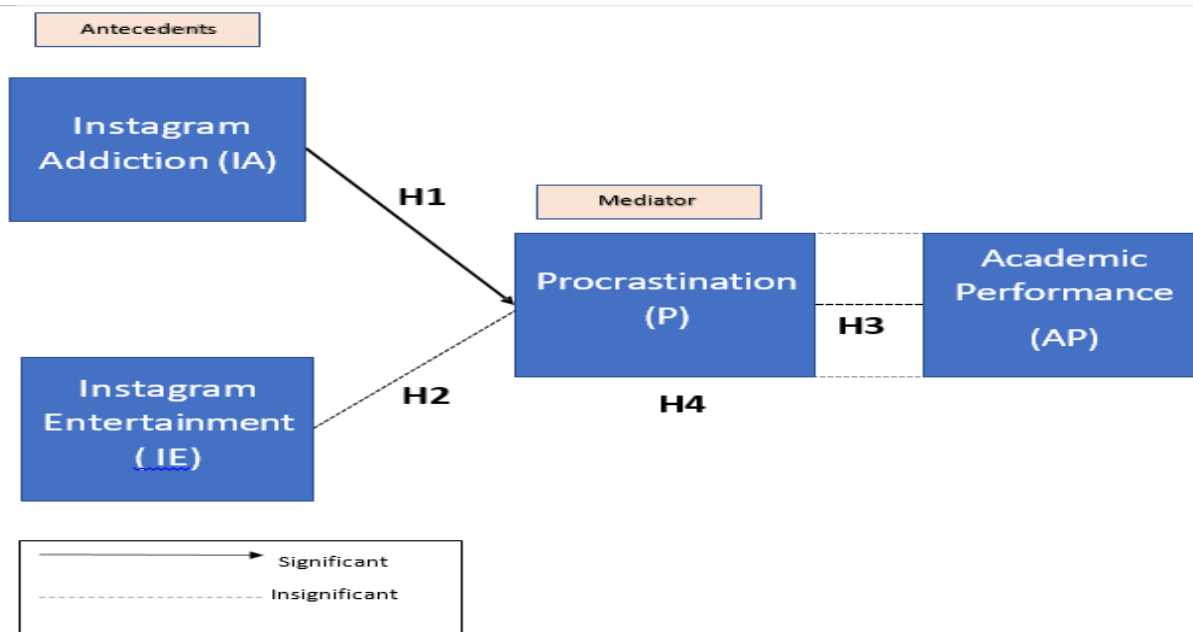
**Coefficient of Determination (R<sup>2</sup> Value)**

The R2 number indicates the percentage of the endogenous variable's variance that the exogenous variable explains. The interpretation of a better level of predictive accuracy can be explained by a higher value of R2, which has a range of 0 to 1. Chin (1998) offered interpretation suggestions based on the values of 0.67, 0.33, and 0.19, which indicate high, moderate, and weak prediction accuracy, respectively. Heir et al. (2011) offered somewhat strict guidelines, classifying prediction accuracy values of 0.75 as substantial, 0.50 as moderate, and 0.25 as weak.

**PARTIAL LEAST SQUARE - STRUCTURAL EQUATION MODELLING (PLS-SEM)**

PLS-SEM is used to test the model empirically. The evaluation of the model is done according to guidelines provided by Sarstedt et al. (2014). As the proposed research model does not involve a formatively measured construct, the evaluation involved two broad stages, i.e., systematic measurement model and evaluation of the structural model.

**Figure 2: Path Coefficients**



**Table 4: Path coefficient significance**

Hypothesis No.	Relationship	Path Coefficient Value	P Value	Result
H1	Instagram Addiction -> Procrastination	0.630	0.000	Supported <sup>^</sup>
H2	Instagram Entertainment-> Procrastination	0.037	0.601	Not Supported
H3	Procrastination->Academic Performance	-0.043	0.596	Not Supported

<sup>^</sup>Significant @ 1%

H1(1) ( $\beta = 0.630, p < 0.01$ ) is supported as very strong positive association between Instagram Addiction and Procrastination.

H1(2) ( $\beta = 0.037, p > 0.05$ ) is not supported as no significant negative relationship is found between Instagram Entertainment and Procrastination.

H1(3) ( $\beta = -0.043, p > 0.05$ ) is not supported as no significant negative relationship is found between Instagram Entertainment and Procrastination.

**Mediation Analysis:**

An independent variable's relationship to a dependent variable is explained by a mediator. An example of mediation is the inquiry, "How did it work?" Understanding the mechanism, causal sequence of events or underlying process is the main goal.

The Figure presents a range of potential mediations that could exist in the relationships between different

conceptions. The purpose of this study is to examine how Instagram Addiction (AI) and Academic Performance (AP) are mediated by Procrastination. Relationships can fall into one of three categories: complete mediation, partial mediation, or no mediation at all.

**Table : 5 Specific Indirect Effect**

Relationship	Coefficient Value	P Values	Statistically Significant
Instagram Addiction -> Procrastination ->Academic Performance	-0.027	0.595	NO
Instagram Entertainment-> Procrastination ->Academic Performance	-0.002	0.830	NO

The bootstrapping analysis in PLS-SEM permit to identify the specific indirect relationship which is presented in table

**TABLE: 6 Mediation Effect (Empirical Model)**

Hypothesis No.	Alternate Hypothesis	Relationship	Indirect Effect			Direct effect			Mediation on effect result
			Path coefficient	P value	Significant?	Path Coefficient	P value	Significant?	
4	H1	IA – P	- 0.027	0.595	No	0.630	0.000	Yes	No Mediation
		IE - P	- 0.002	0.830	No	0.037	0.601	No	No Mediation

The Table represents the evaluation of significant indirect and direct effects to identify whether there is no mediation, full mediation or partial mediation. It represents that Instagram Addiction (IA) has direct negative effect on Academic Performance (AP) but there is no indirect effect so it can be stated that Procrastination has no mediation between Instagram Addiction (IA) and Academic Performance (AP). Instagram Entertainment (IE) has no direct significant association with Academic Performance (AP) and it has no significant indirect association with the same so it can be stated that Procrastination has no mediation between Instagram Entertainment (IE) and Academic Performance (AP).

**FINDING**

University students with higher Instagram use intensity tend to procrastinate more, according to the research. Instagram Addiction (IA) has direct negative effect on Academic Performance (AP) but there is no indirect effect so it can be stated that Procrastination has no mediation between Instagram Addiction (IA) and Academic Performance (AP). Instagram Entertainment (IE) has no direct significant association with Academic Performance (AP) and it has no significant indirect association with the same so it can be stated that Procrastination has no mediation between Instagram Entertainment (IE) and Academic Performance (AP).

**CONCLUSIONS**

Businesses have recently become interested in social media due to its growing usage. With Instagram's rise in popularity as a social media tool, people are becoming more curious about why and how users interact with the platform's posts. Thus, the aim of this study was to investigate the relationship between university students' intensity and the intensity of Instagram usage.

This study will help the businessmen whose target market are university students, to initiate the marketing campaigns on platform such as Instagram to ensure healthy sales and being up to date.

The study helped in deriving the results that procrastination plays a negative role in the academic performance of university students.

Instagram Addiction (IA) has direct negative effect on Academic Performance (AP) but there is no indirect effect so it can be stated that Procrastination has no mediation between Instagram Addiction (IA) and Academic Performance (AP). Instagram Entertainment (IE) has no direct significant association with Academic Performance (AP) and it has no significant indirect association with the same so it can be stated that Procrastination has no mediation between Instagram Entertainment (IE) and Academic Performance (AP).

### **PRACTICAL IMPLICATIONS, LIMITATIONS AND FUTURE SCOPE OF RESEARCH**

The study highlights that higher Instagram Addiction significantly increases procrastination and negatively affects academic performance among management students. Educational institutions should therefore promote digital awareness programs, time-management training, and digital well-being initiatives to help students regulate social media use. Faculty members and mentors can encourage structured study habits and monitor academic engagement. For marketers, the findings suggest adopting responsible and ethical digital strategies when targeting university students, avoiding content that promotes excessive usage. Overall, the study emphasizes the need for balanced social media consumption to safeguard students' academic productivity and long-term performance.

Despite its contributions, the study has certain limitations. First, the use of non-probability convenience sampling restricts the generalizability of findings beyond management students in Gujarat. Second, the cross-sectional research design limits the ability to infer causality. Third, self-reported data may be subject to response bias and social desirability bias. Fourth, the study focused only on Instagram, excluding other social media platforms that may influence procrastination and academic performance.

Future research may extend the study across multiple states or countries using probability sampling methods for broader generalization. Longitudinal research designs can be adopted to examine causal relationships over time. Researchers may also explore moderating variables such as gender, emotional intelligence, self-control, academic motivation, or socio-economic background. Comparative studies between different academic disciplines or between undergraduate and postgraduate students could provide deeper insights. Additionally, future models may include other platforms such as TikTok, YouTube, or LinkedIn to examine platform-specific behavioral differences.

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