

Impact of the Internet on Academic Performance of Undergraduate Business Students of Pokhara University in Kathmandu Valley

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Abstract

This study examines the impact of the internet on academic performance of undergraduate business students of Pokhara University in Kathmandu Valley. Academic performance is the dependent variable. The selected independent variables are internet usage, online communication, internet skills, digital literacy and online learning engagement. The primary source of data is used to assess the opinion of respondents regarding internet usage, online communication, internet skills, digital literacy, online learning engagement and academic performance. The study is based on primary data of 125 respondents. To achieve the purpose of the study, structured questionnaire is prepared. The correlation and multiple regression models are estimated to test the significance and importance of the internet on academic performance of undergraduate business students of Pokhara University in Kathmandu Valley.

The study showed a positive impact of internet usage on academic performance. It indicates that the effective use of the internet for educational purposes significantly enhances students' academic performance. Similarly, the study showed a positive impact of online communication on academic performance. It indicates that effective online communication leads to increase in academic performance. Likewise, the study showed a positive impact of internet skills on academic performance. It indicates that proficiency in navigating online platforms and utilizing digital tools effectively contributes to academic success. Further, the study showed a positive impact of digital literacy on academic performance. It indicates that evaluating and applying online information for educational purposes lead to increase on academic performance. In addition, the study showed a positive impact of online learning environment on academic performance. It indicates that a well-structured and interactive online learning setting enhances students' academic performance.

Keywords: internet usage, online communication, internet skills, digital literacy, online learning engagement, academic performance

1. Introduction

The internet has become an indispensable part of modern life, fundamentally transforming various aspects of human activities, especially education. It has emerged as a vital tool for accessing information, fostering communication, and enabling collaboration, which are essential for academic success. In addition to being a gateway to vast knowledge resources, the internet facilitates real-time interaction and information sharing among students, teachers, and educational institutions. This has led to significant changes in traditional learning methods, as students now rely heavily on internet-based platforms for research, assignments, and even virtual classes. The internet has revolutionized the way students engage with academic materials, providing them with unprecedented access to a wealth of knowledge, resources, and learning tools. However, this increased connectivity has also introduced new challenges, particularly in terms of balancing academic responsibilities with the distractions that the internet offers. The interplay of cultural, social, and technological factors significantly shapes the relationship between internet usage and academic outcomes. According to Jahan *et al.* (2021), the implementation of technology is changing the working practices in all sectors of the economy. The usage of internet has become the essential part of both developing and developed economies, individuals are using it for their education, leisure and social interaction. Similarly, Praveeni and Wickramasinghe (2021) stated that

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the proliferated use of smartphones poses new challenges for higher education institutes along with the detrimental effects these devices have on the overall academic performance of university students.

Ahmad (2019) examined the effects of internet-based social networking on university students' academic performance, specifically within the School of Quantitative Sciences. The study found that while the internet provides students with easy access to vast amounts of information, it also contributes significantly to distractions that negatively impact academic performance. The study also revealed that excessive engagement with social media platforms leads to a reduction in students' study time and concentration levels. Similarly, Mandasari (2020) explored the role of online learning in redefining educational experiences, particularly in the context of higher education. The study revealed that the internet has significantly enhanced students' ability to engage with academic materials, offering greater flexibility and accessibility. Likewise, Maqableh *et al.* (2021) examined how students' intent to utilize the internet for academic purposes impacts their overall performance. The study concluded that the effective and disciplined use of internet resources directly contributes to better academic outcomes, highlighting the internet's role in shaping academic success. The issue of internet addiction has been widely studied to understand its impact on academic performance.

Javaeed *et al.* (2020) investigated the relationship between excessive internet usage and academic outcomes among undergraduate students. The study revealed that due to the advanced development of network construction in universities, the number of Internet-using university students is increasing. In addition, Zolocheskaya *et al.* (2021) examined the impact of e-learning on academic performance, particularly focusing on the benefits of integrating online learning platforms into traditional educational settings. The study found that e-learning platforms significantly boosted student engagement and academic achievement when complemented with well-structured teaching strategies. Moreover, Gotip *et al.* (2023) explored the effect of internet-based instructional strategies on students' academic achievement in economics. The study showed that when internet-based instruction was used in a structured and engaging manner, students performed significantly better in assessments, as it provided them with interactive and real-time learning experiences.

Kakaraki *et al.* (2017) examined the correlational study focusing on internet addiction, academic performance, and personality traits among female university students. The study found a strong relationship between internet addiction and academic underachievement, particularly among students with traits such as impulsivity and a lack of self-regulation. Similarly, Shuja *et al.* (2019) assessed the effect of mobile learning (m-learning) on students' academic performance, highlighting the flexibility that mobile technologies provide in enhancing students' learning experiences. The study pointed out that mobile learning, by offering students the ability to study at their own pace and convenience, positively impacted academic performance, particularly if students were not guided to use these tools effectively. Likewise, Khamis *et al.* (2024) investigated the use of prescriptive analytics to predict students' internet usage patterns and how these affect academic performance. The study concluded that internet usage, when harnessed effectively through analytics-based guidance, could lead to improved academic outcomes.

Bahrami *et al.* (2024) examined the effects of internet addiction on academic achievement and musculoskeletal disorders among university students. The study found that students who spent excessive time online not only experienced a decline in academic

performance but also suffered from physical health issues, including musculoskeletal disorders due to prolonged screen time. The study also highlighted that internet addiction not only interferes with students' academic tasks but also negatively affects their overall well-being. In addition, Pardo *et al.* (2016) explored the role of self-regulated learning in predicting academic performance, emphasizing that students who demonstrated high levels of self-regulation in online learning environments tended to perform better academically. The study indicated that self-regulated learners, who proactively manage their study schedules and learning goals, achieved higher grades compared to their peers who lacked such regulation.

In the context of Nepal, Paudel *et al.* (2024) explored the impact of internet addiction on the quality of life among Nepalese undergraduates. The study indicated that excessive internet usage, particularly for non-academic purposes, had a detrimental effect on both the academic performance and overall well-being of students. Similarly, Adhikari (2024) examined the effects of social media on the academic performance of university students in Nepal. The study highlighted the dual nature of social media, where it can be both a valuable educational resource and a major distraction. Likewise, Adhikari *et al.* (2022) explored internet addiction and its associated factors among undergraduate students, finding that excessive internet use negatively affects academic performance by reducing study time, increasing distractions, and impairing students' ability to focus on academic tasks. Further, Pokhrel and Nepalgunj (2023) found that students who are heavily dependent on the internet for social interaction faced difficulties in their studies and social lives, which ultimately affected their overall academic performance. In addition, Paudel *et al.* (2024) examined the broader effects of internet addiction on students' quality of life and academic performance. The study stated that Internet Addiction (IA) is understood as an individual's inability to control his or her own use of internet causing disturbances and impairment in fulfillment of work, social, and personal commitments.

The above discussion shows that empirical evidence vary greatly across the studies on the impact of the internet on academic performance of undergraduate business students. Though there is above-mentioned empirical evidence in the context of other countries and in Nepal, no such findings using more recent data exist in the context of Nepal. Therefore, in order to support one view or the other, this study has been conducted.

The major objective of the study is to examine the impact of the internet on academic performance of undergraduate business students of Pokhara University in Kathmandu Valley. Specifically, it examines the relationship of internet usage, online communication, internet skills, digital literacy and online learning engagement with academic performance of undergraduate business students of Pokhara University in Kathmandu Valley.

The remainder of this study is organized as follows: section two describes the sample, data, and methodology. Section three presents the empirical results, and the final section draws the conclusion.

2. Methodological aspects

The study is based on the primary data which were collected from 125 respondents through questionnaire. The study employed convenience sampling method. The respondents' views were collected on internet usage, online communication, internet skills, digital literacy, online learning engagement and academic performance. This study is based on descriptive as well as causal comparative research designs.

The model

The model used in this study assumes that academic performance depends upon various factors. The dependent variable selected for the study is academic performance. Similarly, the selected independent variables are internet usage, online communication, internet skills, digital literacy and online learning engagement. Therefore, the model takes the following form:

Academic performance = f (internet usage, online communication, internet skills, digital literacy, online learning engagement)

$$AP = \beta_0 + \beta_1 IU + \beta_2 OC + \beta_3 IS + \beta_4 DL + \beta_5 OLE + e$$

Where,

AP = Academic performance

IU = Internet usage

OC = Online communication

IS = Internet skills

DL = Digital literacy

OLE = Online learning engagement

Academic performance was measured using a 5-point Likert scale where the students were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items, and sample items include “Academic performance of students is influenced by internet usage,” “Online communication impacts students’ academic performance,” and so on. The reliability of the items was measured by computing Cronbach’s alpha ($\alpha = 0.852$).

Internet usage was measured using a 5-point Likert scale where the students were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items, and sample items include “I frequently use the internet to access academic content,” “Internet usage significantly impacts my academic performance,” and so on. The reliability of the items was measured by computing the Cronbach’s alpha ($\alpha = 0.790$).

Online communication was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items, and sample items include “Online communication with peers helps me better understand academic concepts,” “Engaging in online discussions improves my academic performance,” and so on. The reliability of the items was measured by computing the Cronbach’s alpha ($\alpha = 0.800$).

Internet skills were measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items, and sample items include “I possess the necessary skills to effectively utilize the internet for academic purposes,” “Internet skills help me achieve better academic outcomes,” and so on. The reliability of the items was measured by computing the Cronbach’s alpha ($\alpha = 0.887$).

Digital literacy was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree.

There are 5 items, and sample items include “I am proficient in evaluating the credibility of online academic resources,” “Digital literacy plays a significant role in my academic success,” and so on. The reliability of the items was measured by computing Cronbach’s alpha ($\alpha = 0.854$).

Online learning engagement was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items, and sample items include “I actively participate in online learning activities to improve my academic performance,” “Engagement in online learning positively impacts my academic results,” and so on. The reliability of the items was measured by computing Cronbach’s alpha ($\alpha = 0.836$).

The following section describes the independent variables used in this study along with the hypothesis formulation.

Internet usage

Internet usage refers to the utilization of online resources, platforms, and tools for accessing, sharing, and managing information, which significantly influences students’ academic performance by shaping their study habits, resource accessibility. Yusof and Steinmueller (2022) showed a positive correlation between internet usage and the academic performance of secondary school students in Indonesia. Similarly, Cahyo *et al.* (2020) found that internet usage frequency significantly impacts students’ academic performance, suggesting that regulated usage is key to maximizing benefits. Likewise, Hemal *et al.* (2024) demonstrated that machine learning techniques can effectively predict the impact of internet usage on students’ academic achievements in Bangladesh. Further, Ansary and Rakshit (2024) revealed that internet usage positively contributes to undergraduate students’ academic achievements, emphasizing its role in modern education. In addition, Jahan *et al.* (2021) identified a significant impact of internet usage on the academic performance of undergraduate students in Karachi. Based on it, this study develops the following hypothesis:

H₁: There is a positive relationship between internet usage and academic performance.

Online communication

Internet-based learning, including online classes and digital tools, refers to the use of the internet to facilitate education and enhance students’ academic performance by offering flexible learning opportunities. Mandasari (2020) examined the impact of online learning on students’ academic performance. The study showed a positive influence of online communication on learning outcomes. Similarly, Aslan (2021) found that problem-based learning in live online classes significantly enhanced learning achievement, problem-solving skills, and communication skills, suggesting that interactive online teaching methods can improve academic performance. Likewise, Dima *et al.* (2022) stated that institutions should foster an environment conducive to online learning. Further, Liang *et al.* (2024) revealed that more active participation in online classes leads to better academic outcomes. In addition, Cano (2022) concluded that although online learning offers flexibility. Based on it, this study develops the following hypothesis:

H₂: There is a positive relationship between online communication and academic performance.

Internet skills

Early internet exposure and the development of digital skills are significant factors influencing students' academic performance. Hurwitz and Schmitt (2020) examined the relationship between early internet exposure, digital skills and academic performance. The study found that children who developed digital skills early benefitted academically in both the short and long term. Similarly, Islam *et al.* (2020) assessed the effect of internet use and electronic game-play on Australian children's academic performance. The study revealed that excessive internet use for recreational purposes negatively impacted academic outcomes. Likewise, Bernacki *et al.* (2021) found that digital learning skill training improved the academic performance of undergraduates in science and mathematics, highlighting the importance of digital competence in specialized fields. Further, Tusyanah *et al.* (2023) explored the factors affecting students' academic performance and soft skills based on the Community of Inquiry (CoI) theory. The study concluded that digital tools should be used to support both cognitive and emotional learning aspects. Based on it, this study develops the following hypothesis:

H₃: There is a positive relationship between internet skills and academic performance.

Digital literacy

Digital literacy defined as the ability to effectively use digital tools, technologies and platforms plays a crucial role in enhancing students' academic performance. Yildiz Durak and Seferoğlu (2020) examined the antecedents of social media usage. The study found that digital literacy positively predicts academic performance by reducing the fear of missing out and fostering better engagement with educational content. Similarly, Wagbara (2022) highlighted that digital literacy skills significantly influence academic performance, with school environment acting as a moderating factor in this relationship. Likewise, Ding *et al.* (2024) investigated the mediation effects of problem-solving abilities on the relationship between digital literacy and K-12 students' academic performance. The study concluded that digital literacy indirectly enhances academic outcomes by improving critical thinking skills. Further, Munir *et al.* (2024) revealed that students with higher digital literacy skills perform better academically due to their ability to effectively utilize digital resources. In addition, Muslim and Setyono (2024) explored the intersection of digital leadership, digital literacy, and higher education performance. The study found that digital literacy drives digital innovation which in turn enhances academic achievement. Based on it, this study develops the following hypothesis:

H₄: There is a positive relationship between digital literacy and academic performance.

Online learning engagement

Online learning, which utilizes digital platforms and virtual environments to deliver education, has significantly influenced students' academic performance by offering flexible learning opportunities and accommodating diverse learning needs. Mandasari (2020) examined the impact of online learning on business correspondence courses. The study found that accessibility and engagement have positive impact on students' academic performance. Similarly, Wu *et al.* (2020) identified that self-efficacy and learning engagement as key mediators in the relationship between motivation and academic performance among medical students. Likewise, Spitzer and Musslick (2021) suggested that structured online environments can be effective for certain subjects. Further, El Said (2021) revealed that

online learning positively influenced academic performance in developing countries despite initial challenges. Based on it, this study develops the following hypothesis:

H₅: There is a positive relationship between online learning and academic performance.

3. Results and discussion

Correlation analysis

On analysis of data, correlation analysis has been undertaken first and for this purpose, Kendall’s Tau correlation coefficients along with mean and standard deviation has been computed and the results are presented in Table 1.

Table 1

Kendall’s Tau correlation coefficients matrix

This table presents Kendall’s Tau coefficients between dependent variable and independent variables. The correlation coefficients are based on 125 observations. The dependent variable is AP (Academic performance). The independent variables are IU (Internet usage), OC (Online communication), IS (Internet skills), DL (Digital literacy) and OLE (Online learning engagement).

Variable	Mean	S.D.	AP	IU	OC	IS	DL	ILE
AP	1.949	0.463	1					
IU	2.106	0.620	0.390**	1				
OC	2.074	0.598	0.609**	0.625**	1			
IS	2.062	0.556	0.439**	0.517**	0.676**	1		
DL	2.102	0.581	0.412**	0.558**	0.681**	0.665**	1	
ILE	2.026	0.468	0.440**	0.479**	0.509**	0.386**	0.517**	1

Notes: The asterisk signs (**) and (*) indicate that the result are significant at one percent and five percent levels respectively.

Table 1 shows the Kendall’s Tau correlation coefficients of dependent and independent variables. The study shows that internet usage is positively correlated to academic performance. It indicates that the effective use of the internet for educational purposes significantly enhances students’ academic performance. Similarly, online communication is positively correlated to academic performance. It indicates that effective online communication leads to increase in academic performance. Likewise, internet skills are positively correlated to academic performance. It indicates that proficiency in navigating online platforms and utilizing digital tools effectively contributes to academic success. Further, digital literacy is positively correlated to academic performance. It indicates that evaluating and applying online information for educational purposes lead to increase on academic performance. In addition, online learning environment is positively correlated to academic performance. It indicates that a well-structured and interactive online learning setting enhances students’ academic performance.

2.3 Regression Analysis

Having indicated the Kendall’s Tau correlation coefficients, the regression analysis has been carried out and the results are presented in Table 2. More specifically, it shows the regression results of internet usage, online communication, internet skills, digital literacy and online learning engagement on academic performance.

Table 2

Estimated regression results of internet usage, online communication, internet skills, digital literacy and online learning engagement on academic performance

The results are based on 125 observations using a linear regression model. The model is $AP = \beta_0 + \beta_1IU + \beta_2OC + \beta_3IS + \beta_4DL + \beta_5OLE + e$ where the dependent variable is AP (Academic performance). The independent variables are IU (Internet usage), OC (Online communication), IS (Internet skills), DL (Digital literacy) and OLE (Online learning engagement).

Models	Intercepts	Regression coefficients of					Adj. R_bar ²	SEE	F-Value
		IU	OC	IS	DL	OLE			
1	1.159 (7.074)**	0.445 (5.432)**					0.187	0.421	29.511
2	1.265 (9.652)**		0.361 (6.054)**				0.223	0.412	36.648
3	1.199 (9.155)**			0.398 (6.656)**			0.253	0.404	43.048
4	1.357 (9.082)**				0.324 (4.637)**		0.142	0.433	21.502
5	1.151 (8.8489)**					0.416 (6.690)**	0.361	0.402	44.757
6	0.862 (5.164)**	0.302 (3.640)**	0.274 (4.425)**				0.294	0.393	26.775
7	0.851 (5.159)**	0.205 (2.154)*	0.197 (2.731)**	0.174 (2.011)*			0.311	0.388	19.644
8	0.840 (4.836)**	0.204 (2.134)*	0.194 (2.649)**	0.165 (1.686)	0.018 (0.209)		0.305	0.389	14.628
9	0.753 (4.371)**	0.210 (2.258)*	0.158 (2.169)*	0.082 (0.823)	0.069 (0.769)	0.240 (2.716)**	0.340	0.379	13.799

Notes:

- i. Figures in parenthesis are t-values.
- ii. The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent level respectively.
- iii. Academic performance is the dependent variable.

Table 2 show that the beta coefficients for internet usage are positive with academic performance. It indicates that internet usage has a positive impact on academic performance. This finding is consistent with the findings of Yusof and Steinmueller (2022). Similarly, the beta coefficients for online communication are positive with academic performance. It indicates that online communication has a positive impact on academic performance. This finding is consistent with the findings of Mandasari (2020). Likewise, the beta coefficients for internet skills are positive with academic performance. It indicates that internet skills have positive impact on academic performance. This finding is consistent with the findings of Hurwitz and Schmitt (2020). Further, the beta coefficients for digital literacy are positive with academic performance. It indicates that digital literacy has a positive impact on academic performance. This finding is consistent with the findings of Yildiz Durak and Seferoğlu (2020). In addition, the beta coefficients for online learning engagement are positive with academic performance. It indicates that online learning engagement has a positive impact on academic performance. This finding is consistent with the findings of Mandasari (2020).

4. Summary and conclusion

The impact of the internet is a critical factor in assessing the academic performance of undergraduate business students. Similar to customer satisfaction in business, various

elements contribute to shaping academic performance, including internet usage, online communication, internet skills, digital literacy, and online learning engagement. A positive academic experience significantly enhances students' academic performance. When students effectively utilize the internet for learning, collaboration, and skill-building, they are more likely to achieve meaningful academic outcomes. Providing access to relevant online resources, fostering digital literacy, and promoting interactive online learning platforms strengthens students' engagement and confidence in their academic pursuits. Furthermore, equipping students with strong internet skills, offering guidance on effective online communication, and encouraging participation in digital learning activities contribute to better academic results. Institutions that actively integrate internet-based learning tools and regularly assess the digital needs of students build a foundation of competence, adaptability, and innovation, which are essential for long-term academic success.

This study attempts to examine the impact of the internet on academic performance of undergraduate business students of Pokhara University in Kathmandu Valley. The study is based on primary data of 125 respondents.

The major conclusion of the study is that internet usage, online communication, internet skills, digital literacy and online learning engagement have positive impact on academic performance. The study also concludes that online learning engagement followed by internet skills is the most influencing factor that affect the academic performance of undergraduate business students.

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