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Mediating Role of Student Satisfaction in Blended Learning and Its Impact on Students' Academic Performance

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ABSTRACT

This study investigates the impact of blended learning on students' academic performance, emphasizing the mediating role of student satisfaction. Data were collected from higher education students and analyzed using Structural Equation Modeling (SEM). The study examines key determinants of student satisfaction, including instructor quality, technology quality, course design, interaction, service quality, system quality, and computer self-efficacy.The results indicate that instructor quality, technology quality, course design, interaction, service quality, and computer self-efficacy have a significant positive effect on student satisfaction, while system quality shows no significant influence. Furthermore, student satisfaction significantly enhances academic performance. Mediation analysis reveals that student satisfaction mediates the relationship between most independent variables and student performance, except for system quality, which shows no mediating effect.The findings highlight the critical role of student satisfaction in improving academic outcomes and suggest that institutions should focus on enhancing teaching quality, technological support, and student engagement in blended learning environments.

Keywords: Blended Learning, Student Satisfaction, Academic Performance, Structural Equation Modeling (SEM), Higher Education, E-learning, Mediation Analysis

INTRODUCTION

The evolution of digital learning platforms has had a significant impact on educational institutions, and it has eventually led to the adoption of new technologies. Many colleges have embraced blended learning to offer improved digital learning resources and digital platforms to advance knowledge.Businesses and educational institutions are adopting more sophisticated learning systems, which is anticipated to raise demand for blended learning.Blended learning can help students develop relationships with professors, peers, and other students through networking and in-person encounters.While the old technique of giving or receiving knowledge was adequate in the pre-digital era, it was no longer sufficient in the digital era. Also , according to the University Grants Commission's concept note, released on May 20, 2021, to introduce blended learning in universities and colleges, where up to 40% of any course can be taught online and the remaining 60% offline, is a welcome move as it will more effectively increase students' learning skills and give them greater access to high-quality education.So, both traditional and technological learning approaches are needed to be used together.According to RBSA Advisors (2021), India's EdTech industry is expected to grow to $30 billion in the next ten years.

The present market size is estimated to be between $700 - $800 million.This is a win-win situation for both the start-ups and the institutions. The start-ups get to reach a wider audience and promote their brand, while the institutions get to provide their students with access to high-quality education at no cost.The demand for online learning has been soaring in recent years, due to factors such as the increasing availability of high-speed internet, the rising cost of traditional education, and the growing demand for flexible learning options.

This has led to tremendous expansion in the edtech sector, as start-ups have raised record-high investments to develop new and innovative learning platforms.As the demand for online learning continues to grow, it is likely that we will see even more growth in the edtech sector in the years to come. Blended learning combines multiple delivery media that are designed to complement each other and promote learning and application-learned behaviour (Smith&Dillon, 1999). Those studying blended learning have agreed that student satisfaction is a baseline requirement for successful implementation. Student satisfaction is considered an important factor in measuring the quality of blended learning.

E-learning to be integrated in addition to face-to-face learning in blended learning environment has been regarded as more effective alternative to face-to-face alone education or e-learning alone. Many institutions implemented e-learning as part of the blended learning to meet learners' need. Therefore, it is equally essential to capture the learners' perceived satisfaction to determine the effectiveness of this learning approach. (Chen& Yao,2016).

Objective of the study

1. To identify the determinants/factors of students' satisfaction in blended learning environment.
2. To confirm factors influencing student satisfaction in blended learning environment.
3. To evaluate the level of students' satisfaction in each of the confirmed factors in the section above and evaluate the level of the overall students' satisfaction with blended learning.
4. To investigate the connection between student satisfaction and academic performance.
5. To analyse the mediating role of students' satisfaction between factors influencing students' satisfaction in blended learning environment and students' performance.

Significance of the Study

Student satisfaction is a critical component of educational effectiveness since higher education institutions are increasingly taking a business-oriented approach, viewing students as clients (Sumartias&Nuraryo, 2017; Elliott & Shin, 2002). According to WTO regulations, education is likewise classified as a service sector because of its intangibility and high level of student contact, which call for effective service delivery to guarantee satisfaction (Kerlin, 2000). Institutions are being forced to concentrate on evaluating and enhancing student happiness due to increased competitiveness, internationalization, and the commercialization of education (Ford et al., 1999; Cuthbert, 1996; Mazzarol, 1998). The UGC's support of blended learning in India, which combines online and offline instruction, emphasizes the significance of satisfaction across various learning modalities.

Student satisfaction is a crucial factor in determining student success because it is closely associated with academic achievement, engagement, and retention (Kintu et al., 2017; Graunke & Woosley, 2005). Furthermore, the necessity for lifelong learning and skill development is highlighted by globalization, rapid technology breakthroughs, and shifting labor market demands, making blended learning an essential strategy for the future of education.

LITERATURE REVIEW

The benefits of blended learning in improving students' academic performance and overall educational experience have been highlighted more and more in recent studies. Student engagement, flexibility, and access to educational materials have all been found to increase with blended learning, which combines in-person instruction with online learning platforms. For example, Tabassum et al. (2024) found that by encouraging active engagement and offering a variety of learning opportunities, blended learning considerably improves students' academic performance. In a similar vein, Regmi et al. (2024) discovered that students in blended learning contexts have better academic results and higher levels of self-efficacy, especially in interactive and collaborative situations.Recent longitudinal study supports these conclusions by showing that blended learning strategies, when paired with factors linked to motivation and satisfaction, have a favorable impact on academic achievement (Zhang et al., 2024).

Student satisfaction has become a crucial factor in determining the success of blended learning systems, in addition to academic achievement. According to Batista-Toledo and Gavilan (2023), when well-designed instructional strategies are used, student satisfaction has a considerable impact on learning effectiveness and academic outcomes. Similarly, recent research has shown that elements like interaction quality, technology usability, and course design are critical in determining how satisfied students are (Li et al., 2023). Higher satisfaction in blended learning environments is closely correlated with peer contact, teacher feedback, and the quality of learning materials, according to a more recent study (Kumar & Singh, 2025).Additionally, recent studies highlight the intimate connection between student satisfaction and engagement in blended learning environments. According to a systematic review by De Bruijn-Smolders and Prinsen (2024), blended learning has a moderate to high effect on student involvement, which in turn improves academic achievement and satisfaction.

In the same way, García-Martínez et al.'s (2023) multi-country study revealed that student participation has a substantial impact on learning results and satisfaction, underscoring the interdependence of these concepts.Significantly, current research offers compelling proof of the mediation function of student happiness in the connection between academic achievement and blended learning. Anthony (2024) discovered that the use of blended learning enhances students' learning results indirectly through higher levels of engagement and satisfaction, supporting the mediating mechanism. Similarly, a meta-analysis by Huang et al. (2023) showed that blended learning has a favorable impact on students' attitudes and achievement, with satisfaction playing a crucial role in converting these impacts into better academic achievements.Further supporting its mediating role, recent analytical research indicates that factors including learning experience, motivation, and feedback have an indirect impact on academic performance through student satisfaction (Sharma et al., 2025).

Furthermore, new developments in blended learning research emphasize how crucial digital resources and technological preparedness are to raising satisfaction among learners. Students prefer engaging and user-friendly platforms, which greatly increase engagement and satisfaction levels, according to a recent study (Ali et al., 2026). In the same way, Basri (2024) highlighted the importance of teacher preparation and digital literacy in guaranteeing the success of blended learning settings and enhancing student satisfaction and academic results.

All things taken into account, the current literature of research unequivocally shows that blended learning significantly enhances academic performance, with satisfaction with learning serving as a critical mediating factor that clarifies this link. Satisfaction acts as a link between teaching strategies and academic achievement by improving motivation, engagement, and learning opportunities. However, more study is still required to examine these correlations utilizing sophisticated analytical methods and a variety of educational contexts, especially in developing nations like India.

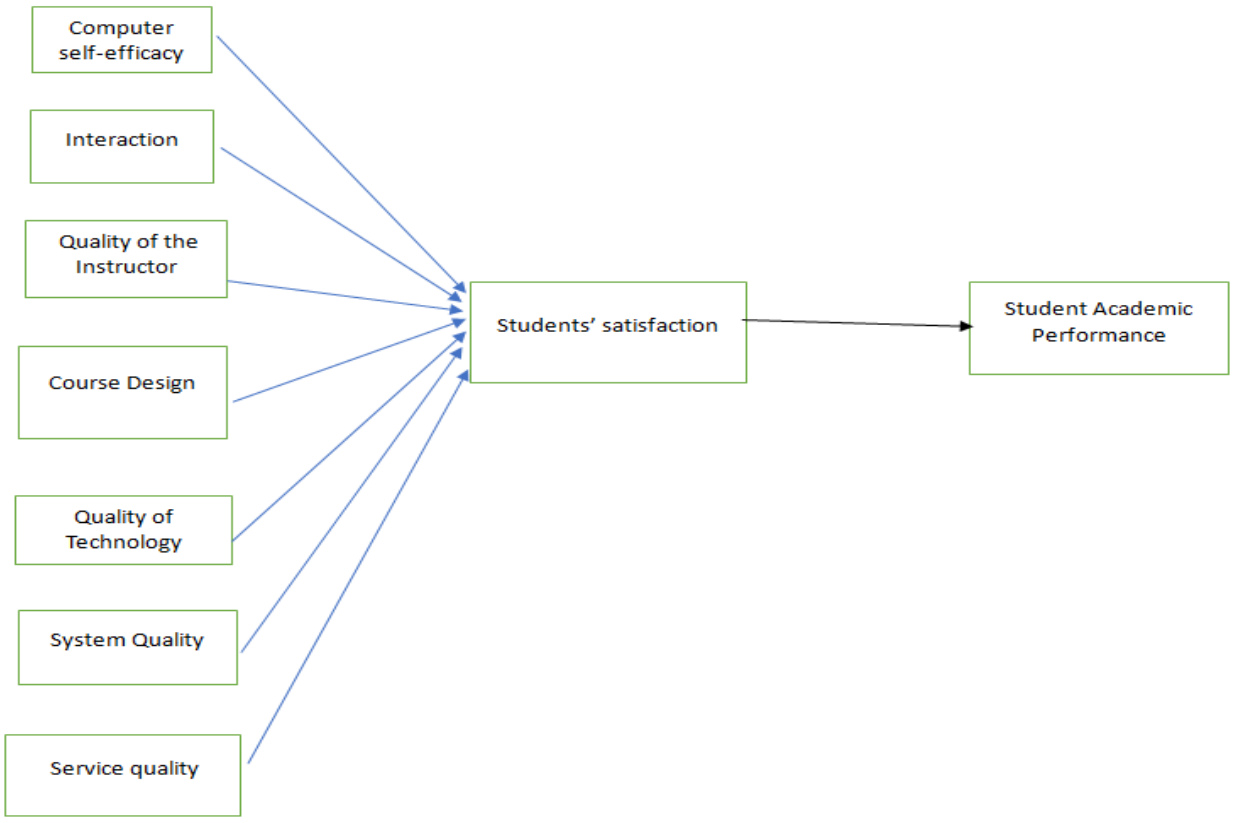
Conceptual Framework

Achievement goal theory has been extensively used in the context of education, and research has shown that it can be used to understand both student satisfaction and student performance. Studies done by (Gopal et al., 2021; Meece et al., 2006; Sun et al., 2008) had used the achievement goal theory framework for understanding student satisfaction and students performance.

In Elliott and Dweck's 1988 work, they define an achievement goal as a cognitive program that encompasses various cognitive processes with consequential effects on cognition, emotions (affective), and behavior. In simpler terms, an achievement goal refers to the mental framework or approach individuals adopt when pursuing success or achievement in a particular context.

1. Cognitive: Refers to the mental processes, thoughts, and reasoning that occur in our minds. It involves how we perceive, process, and remember information.
2. Affective: Relates to emotions, feelings, and attitudes. It includes how we experience and react emotionally to different situations and stimuli.
3. Behavioral: Refers to our actions, behaviors, and observable responses. It involves what we do and how we behave in response to various internal and external factors

Elliott and Dweck's emphasis on the comprehensive nature of achievement goals highlights that they are not solely about the end result but encompass the entire process of pursuing and achieving success. This perspective has been instrumental in understanding how individuals' mindset and goal orientation impact their behavior and outcomes, contributing significantly to the field of achievement motivation and educational psychology



Computer self-efficacy and student satisfaction

Computer self-efficacy refers to an individual's belief in their ability to use computers to accomplish specific tasks (Compeau & Higgins, 1995). Based on social cognitive theory, such beliefs influence behaviour and performance (Bandura, 1982). In blended learning, research has mainly focused on learners' confidence in using technology (Pellas, 2014). Studies show that computer self-efficacy significantly predicts student satisfaction and has a positive relationship with it (Lim, 2001; Aldhahi et al., 2022; Alqurashi, 2017; Yilmaz, 2017).

H1: Computer self-efficacy has a significant impact on students' satisfaction in blended learning environment.

Interaction and students' satisfaction

Interaction is essential in blended learning as it reduces isolation and supports knowledge building (Abbas, 2017; Juwah, 2006). Effective collaboration and proper use of technology enhance engagement (Lee, 2012; Jain et al., 2011). Research shows that especially learner–instructor interaction significantly improves student satisfaction (Battalio, 2007; Swan, 2001), with recent studies confirming a positive relationship between interaction and satisfaction (Dinh et al., 2021; Li & Jhang, 2020).

H2: Interaction has a significant impact on student satisfaction in blended learning environment.

Quality of instructor and student satisfaction

Instructor quality is a key determinant of student satisfaction, with factors such as availability, responsiveness, and effective teaching playing an important role (DeBourgh, 1999; Hiltz, 1993). Skilled and supportive instructors who understand students' needs and motivate them contribute to better learning experiences and higher satisfaction levels (Munteanu et al., 2010; Kaufman, 2015). Recent studies also confirm a positive relationship between instructor quality and student satisfaction (Kartika et al., 2021; Suarman, 2015).

H3: Quality of instructor has a significant impact on student satisfaction in blended learning environment.

Course design and student satisfaction

Course design plays a vital role in shaping students' learning and satisfaction, as it influences their expectations and learning experience (Liaw, 2008; Lin et al., 2008). Well-structured and interactive course designs lead to better academic outcomes compared to traditional approaches (Black & Kassaye, 2014). Considering different learning styles is also essential to ensure effective learning for all students (Wooldridge, 1995). Studies further confirm a positive relationship between course design and student satisfaction (Jenkins, 2015; Kordloo& Nobakht Sareban, 2021).

H4: course design has a significant impact on student satisfaction in blended learning environment.

Quality of technology and students' satisfaction

Technology plays a crucial role in enhancing learning in online and blended environments, often extending beyond traditional methods (Smart & Cappel, 2006). Access to reliable and user-friendly technology is essential, as limited access or technical difficulties can reduce student satisfaction (Belanger & Jordan, 2000; Hara & Kling, 2003). Studies show that effective technology use and support positively influence students' satisfaction (Piccoli et al., 2001; Jiménez-Bucarey et al., 2021; Kakada et al., 2019).

H5: Quality of technology has a significant impact on students' satisfaction in blended learning environment.

Service Quality and Students Satisfaction

Service quality, including responsiveness, reliability, and effective communication, plays an important role in supporting learners (Sharma et al., 2017). In blended learning, the quality of online services significantly influences student satisfaction, as it reflects how well students are supported by the system (Roca et al., 2006). Studies consistently show a positive relationship between service quality and student satisfaction (Ramayah & Lee, 2012; Pham et al., 2019).

H6: Service quality has a significant impact on students' satisfaction in blended learning environment.

System Quality and Students' Satisfaction

System quality significantly influences students' satisfaction and acceptance of e-learning systems, as it reflects usability, reliability, and accessibility (Roca et al., 2006; DeLone&McLean, 2002). Higher system quality improves user experience and encourages adoption, leading to greater satisfaction (Salloum et al., 2019; Safsouf et al., 2020).

H7: System Quality Has a significant impact on students' satisfaction in blended learning environment.

Students' satisfaction and Students Academic Performance

Student satisfaction is closely linked to motivation, learning, and retention (Biner et al., 1996). Academic performance, a key indicator of educational success, reflects students' learning outcomes and institutional effectiveness (Narad & Abdullah, 2016). Research shows a strong positive relationship between student satisfaction and academic performance (Ko & Chung, 2014; Alavi & Vogel, 1997), with recent studies confirming that higher satisfaction leads to better performance (Alamri, 2019; Aldholay et al., 2018; Pérez-Pérez et al., 2020).

Satisfaction as a mediator

Goal theory suggests that students perform better when they understand the factors influencing their academic success (Sibanda et al., 2015). Prior studies indicate that variables such as instructor quality, technology quality, course design, learner interaction, system quality, and service quality indirectly affect academic performance through student satisfaction (Gopal et al., 2021; Keržič et al., 2021).

H9: instructor quality, technology quality, computer self-efficacy, course design, system quality, service quality and learner interaction affect the students' performance through satisfaction.

RESEARCH METHODOLOGY

Targeted Research Population

This study examines the impact of blended learning on student satisfaction and academic performance among Indian students. Due to time and cost constraints, data were collected from students in the Delhi-NCR region, which represents a diverse urban population. A questionnaire was used as the primary data collection method.

Construct	No. of items	Cronbach's Alpha
Instructor Quality	6	.908
Technology Quality	8	.931
Course Design	6	.949
System Quality	5	.854
Service Quality	4	.868
Computer Self-Efficacy	12	.961
Learner Interaction	18	.967
Students Satisfaction	4	.909
Students' Performance	6	.935

Sampling Technique

This study employed purposive sampling, a non-probability technique suitable for multivariate analysis and commonly used in survey research (Black, 2019; Bryman & Bell, 2015). It is particularly appropriate for studies involving human participants and consumer behaviour (Polit & Beck, 2010). A screening question was included to ensure that only students engaged in blended learning were selected for the study.

The sampling Size

The sample size was determined based on factors such as analysis method, sampling technique, and practical constraints (Malhotra et al., 2017). Since this study used SEM, which requires larger samples for reliable results (Tabachnick & Fidell, 2001), a total of 453 responses were collected. Given the 69 indicators in the study, this sample size was considered adequate according to established guidelines (Comrey & Lee, 1992; Tinsley & Tinsley, 1987).

Scale/ Instrument Development/ Questionnaire Design

The study used latent constructs measured through established scales adapted from prior research. Data were collected using a structured questionnaire with a five-point Likert scale. The instrument included two sections: demographic details and measurement items for variables such as system quality, service quality, computer self-efficacy, technology quality, instructor quality, course design, student satisfaction, and academic performance. Minor modifications were made based on pilot testing to ensure relevance and clarity.

Pre-testing and Pilot testing

Pre-testing was conducted to ensure clarity, structure, and relevance of the questionnaire items (Kumar et al., 2013). Subsequently, a pilot study with 62 students was carried out to assess feasibility and reliability (Sekaran & Bougie, 2011). The results showed a Cronbach's alpha value above 0.70, confirming the reliability of the instrument (Nunnally, 1978).

Data Collection

Primary data were collected using a structured questionnaire based on previous literature, employing a five-point Likert scale. The survey was distributed online through platforms such as WhatsApp, Telegram, Facebook, and LinkedIn to students in the Delhi-NCR region. Out of 496 responses received, 453 were valid for analysis. Data collection took place from June to September 2025.Secondary data were obtained from books, journals, magazines, newspapers, and online databases.

Data Analysis and Interpretation

Relaibility

Reliability analysis was conducted to assess the internal consistency of the Likert scale responses. Cronbach's alpha, a widely accepted measure of reliability, was used for this purpose (Cronbach, 1951; Nunnally, 1978). The results showed alpha values above 0.70 for all constructs, indicating satisfactory reliability. The analysis was performed using SPSS, confirming that the data were consistent and suitable for further study.

Descriptive Statistics

Descriptive statistics were used to organise and summarise the data, providing an overview of the sample characteristics (Bryman & Bell, 2011). Responses were collected using a five-point Likert scale. The mean values for all constructs were around 4, indicating a generally positive response, while standard deviation values were mostly below 1, suggesting low variability and consistency in responses.

Constructs	Mean	Standard Deviation
Instructor Quality	4.0883	.97179
Technology Quality	4.2792	.72213
Course Design	3.4511	1.17066
System Quality	4.2627	.73482
Service Quality	4.1474	.84662
Computer self-efficacy	3.6602	.84560
Learner Interaction	3.6333	.82612
Students' satisfaction	3.5916	.91291
Students Performance	3.6472	.92547

Exploratory Factor Analysis (EFA)

Exploratory Factor Analysis (EFA) using Principal Component Analysis in SPSS was conducted to examine dimensional validity and identify underlying factors. The results confirmed data suitability, with a high KMO value of 0.960 and a significant Bartlett's test ($p < 0.01$), indicating adequate sample size and factorability. These findings demonstrate that the data were appropriate for factor analysis and reliable for further evaluation of the constructs.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.960
Bartlett's Test of Sphericity	Approx. Chi-Square	32635.175
	Df	2346
	Sig.	.000

Confirmatory Factor Analysis (CFA)

It was conducted as the first step to assess the validity and model fit of the constructs, followed by Structural Equation Modelling (SEM) to test the hypothesised relationships (Hair et al., 2010). CFA examined the relationships among constructs within the conceptual model and ensured that only valid and reliable measures were included. In the model, constructs are linked to their indicators through directional paths, while relationships among constructs are represented through covariance.

Goodness of fit indices

Model fit was assessed using maximum likelihood estimation based on variance–covariance matrices (Hair et al., 2010). Several goodness-of-fit indices were used, including χ^2/df (with values < 3 indicating good fit), NFI, PNFI, CFI, AGFI, RMSR, and RMSEA (Kline, 2005). However, indices such as GFI are now less preferred due to their sensitivity to sample size and are often avoided in recent research (Sharma et al., 2005).

Fit statistics	Threshold limit	Reference	Measurement Model	Hypothesised Model
CMIN/DF	Less than 3	Hu &Bentler(1999)	2.234	2.355
Comparative fit index (CFI)	Greater than .90	Hu &Bentler(1999); Hair et al.(2006)	.921	.913
Goodness of Fit index(GFI)	Greater than .80	Baumgartner&Homburg(1996)	.795	.788
Tucker-Lewis Index(TLI)	Greater than .90	Bentler &bonett,(1980); Hair et al.(2006)	.917	.908
Incremental Fit Index	Greater than .90	Hu &Bentler(1999)	.922	.914
Root mean square error of approximation (RMSEA)	Less than .08	Hu &Bentler(1999) ; Hair et al.(2006)	.052	.055
Standardized Root mean square residuals (SRMR)	Less than 0.08	Hu &Bentler(1999)	.0357	.0732

Discriminant validity

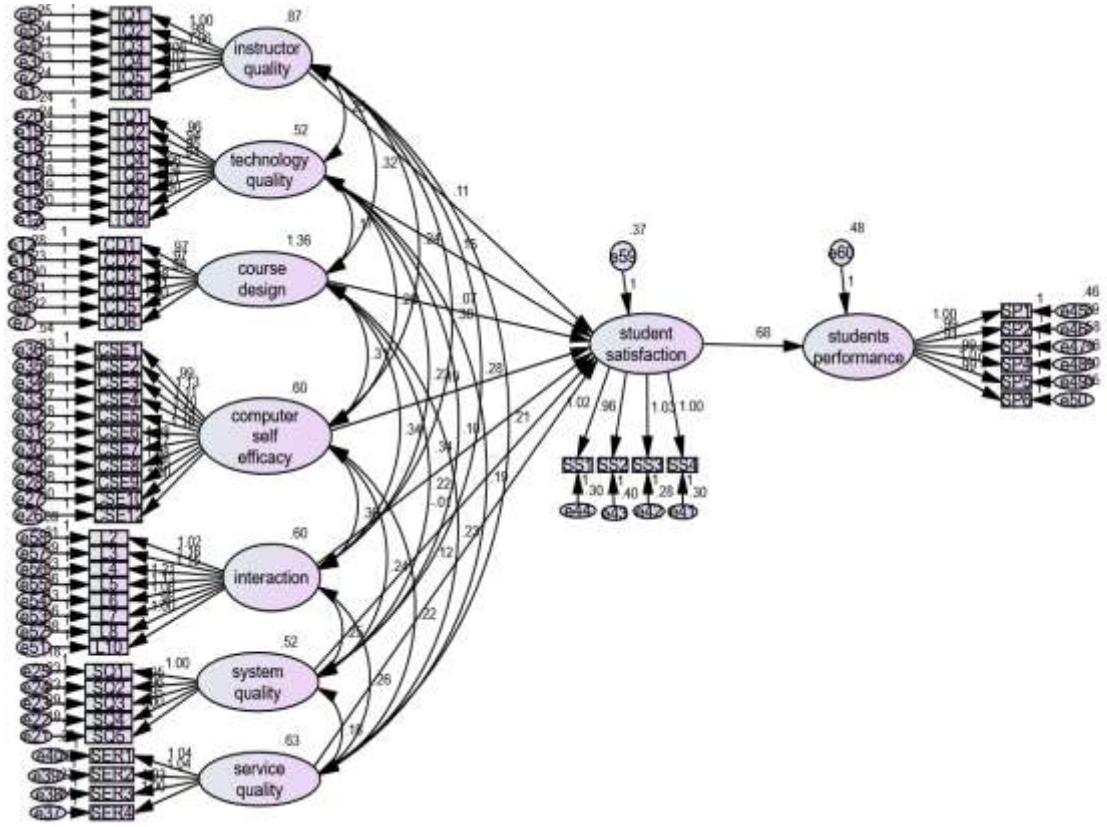
Discriminant validity ensures that constructs are distinct and not highly correlated with others (Thong, 2001). It was assessed using the Fornell and Larcker (1981) criteria, where AVE values exceeded MSV and the square root of AVE was greater than inter-construct correlations. The results confirmed satisfactory discriminant validity for all constructs. Convergent validity was also established, as AVE values were above 0.50 and composite reliability (CR) exceeded 0.70, indicating adequate reliability and validity of the measurement model.

	CR	AVE	MSV	SS	IQ	TQ	CD	SQ	SER	CSE	LI	SP
SS	0.900	0.693	0.341	0.833#								
IQ	0.954	0.777	0.280	0.429	0.881#							
TQ	0.947	0.692	0.172	0.415	0.373	0.832#						
CD	0.964	0.818	0.141	0.346	0.292	0.202	0.904#					
SQ	0.917	0.690	0.197	0.322	0.416	0.194	0.266	0.831#				
SER	0.922	0.748	0.181	0.394	0.292	0.340	0.253	0.313	0.865#			
CSE	0.954	0.657	0.375	0.485	0.327	0.352	0.343	0.427	0.366	0.811#		
LI	0.940	0.661	0.564	0.576	0.529	0.404	0.376	0.444	0.426	0.592	0.813#	
SP	0.919	0.655	0.564	0.584	0.463	0.292	0.331	0.411	0.416	0.612	0.751	0.809#

Note: # Square root of AVE; AVE= AVAERAGE VARIANCE EXTRACTED; MSV= MAXIMUM SHARED VARIANCE; SS=STUDENTS SATISFACTION; IQ=INSTRUCTOR QUALITY; TQ=TECHNOLOGY QUALITY; CD=COURSE DESIGN; SQ=SYSTEM QUALITY; SER=SERVICE QUALITY; CSE=COMPUTER SELF-EFFICACY; LI=LEARNER INTERATION; SP=STUDENTS PERFORMAMCE.

Analysis of the Structural Model and Hypotheses testing

After establishing reliability and validity, the structural model was used to examine relationships among exogenous, mediating, and endogenous variables (Hair et al., 2010). Unlike CFA, SEM distinguishes between independent and dependent variables, where covariance among independent variables is shown by two-headed arrows and causal relationships by one-headed arrows. This step defines the relationships among the constructs in the model.



The structural model demonstrated a good fit, with CMIN/DF = 2.355 and other indices within acceptable ranges. Path coefficients were analysed to test the hypothesised relationships. Results with p-values less than 0.05 were considered significant and supported the hypotheses, while those above 0.05 were deemed insignificant.

Hypothesis Testing

Hypothesis	Path of Hypothesis	S.E.	C.R.	p value	Decision
H1	SS←IQ	.044	2.426	.015	Supported
H2	SS←TQ	.053	2.841	.004	Supported
H3	SS←CD	.031	2.136	.033	Supported
H4	SS←I	.065	5.255	***	Supported
H5	SS←SQ	.056	-.136	.892	Not-Supported
H6	SS←SER	.049	2.451	.014	Supported
H7	SS← CSE	.057	3.304	***	Supported
H8	SP←SS	.055	12.392	***	Supported

The SEM results indicate that most factors significantly influence student satisfaction in a blended learning environment. Instructor quality, technology quality, course design, learner interaction, service quality, and computer self-efficacy all showed a positive and significant impact on student satisfaction, supporting hypotheses H1, H2, H3, H4, H6, and H7. However, system quality did not show a significant relationship with student satisfaction, leading to the rejection of H5.

Furthermore, student satisfaction was found to have a significant positive effect on academic performance, supporting H8. Overall, the findings highlight student satisfaction as a key mediating factor linking blended learning determinants to academic performance.

Mediation Effect

Path	S.E.	Lower Bounds	Upper Bounds	p value	Decision
SP←SS←IQ	.076	.017	.144	.011	Supported
SP←SS←TQ	.082	.025	.138	.002	Supported
SP←SS←CD	.058	.001	.113	.039	Supported
SP←SS←I	.201	.121	.290	.001	Supported
SP←SS←SQ	-.004	-.067	.056	.878	Not-supported
SP←SS←SER	.110	.014	.132	.016	Supported
SP←SS←CSE	.072	.041	.180	.004	Supported

The mediation analysis using bootstrapping revealed that student satisfaction significantly mediates the relationship between most blended learning factors and student performance. Specifically, instructor quality, technology quality, course design, learner interaction, service quality, and computer self-efficacy showed significant indirect effects on performance through student satisfaction, as indicated by p-values < 0.05 and confidence intervals not including zero. However, system quality did not exhibit a significant mediating effect, as its confidence interval included zero and the p-value was greater than 0.05.

Overall, the results confirm that student satisfaction plays a crucial mediating role in linking key determinants of blended learning to students' academic performance.

DISCUSSION, IMPLICATIONS AND CONCLUSION

The study found that instructor quality, technology quality, course design, learner interaction, and service quality are all important factors in influencing student satisfaction in blended learning environments.Effective instructor design and delivery, characterized by competence, responsiveness, and engagement, significantly contribute to students' satisfaction.Technology quality, encompassing factors such as accessibility, reliability, and user-friendliness of learning platforms and tools, plays a crucial role in enhancing student satisfaction.Well-structured and organized courses lead to higher levels of satisfaction. The integration of interactive and collaborative learning activities, along with the provision of clear learning objectives and assessments, positively impacts students' satisfaction and engagement.Meaningful interaction and collaboration among students, facilitated through discussion forums, group projects, and peer-to-peer learning activities, contribute to a sense of belongingness, engagement, and overall satisfaction with the blended learning experience.

Prompt and effective support services, personalized assistance, and proactive communication channels contribute to higher levels of satisfaction among students.Higher levels of satisfaction are associated with increased motivation, engagement, and a sense of ownership in the learning process, ultimately leading to improved academic outcomes.Educational institutions can utilize these findings to inform their practices and strategies in blended learning environments.By prioritizing student satisfaction in blended learning environments, educational institutions can create an engaging, supportive, and effective learning experience for students.The study also sheds light on how student satisfaction mediates the link between a variety of variables and academic achievement.Overall, the study offers a framework for comprehending the intricate interaction between different variables and their effects on students' satisfaction and performance in blended learning contexts.

MANAGERIAL IMPLICATION

Research findings can be used to create blended learning programs that meet student needs by integrating strong curriculum, qualified teachers, solid technology, engaging learning opportunities, and top-notch support services.Resource allocation is important for blended learning satisfaction. Management should allocate resources to student services, faculty training, and technology infrastructure.Faculty development is important for blended learning satisfaction. Management should prioritize faculty development and provide tools for assistance that improve faculty's technology skills, pedagogical abilities, and student engagement.Quality assurance procedures are important for educational institutions. They can increase satisfaction and confidence by conducting internal audits, comparing performance to industry standards, and winning external recognition or certification.Student interaction and support are important for blended learning satisfaction. Management should create initiatives that encourage interaction, teamwork, and personalized support.Collaboration with businesses, groups, and other institutions can increase the usefulness and applicability of blended learning programs. This can be done by adding real-world projects, guest lectures, and industrial internships to give students hands-on learning opportunities.

LIMITATIONS

Firstly, the study is founded on cross-sectional data, which was collected at a specific point in time. In order to establish the causation between the factors, future researchers can use longitudinal data.Second ,the survey exclusively includes respondents from the Indian region of Delhi/NCR. Future studies that replicate our research strategy can be conducted in other Indian states or in any other nation, validating our findings and outcomes.Third, the analyses were carried out taking into account the entire total replies from the students of the study's chosen public and private colleges both. To better understand the differences in students' satisfaction between public and private sector colleges, the future study could compare the student's satisfaction and student performance in private and public colleges. Fourthly, this study doesn't take into account the viewpoint of the instructors and is entirely student-centric. Lastly, Future research can investigate additional mediating factors to look at the indirect connection between blended learning determinants and students' performance.

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