Role of Communication Style, E-learning Environment, and Student Satisfaction on Academic Performance: Moderating Role of Institutional Support

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Abstract

Several factors such as excessive usage of social media, quality of academic activities, family and social association, and a rapidly changing and challenging environment can negatively impact the academic performance of students. The present study aims to determine students' academic performance in higher education institutions in China, considering the role of communication styles, e-learning environment, student satisfaction, and a moderating effect of institutional support in predicting students' academic performance. Adopting a quantitative research design with sample random sampling technique, this study collected data through a validated questionnaire from a sample of 385 students from Chinese universities. Smart-PLS-4 was used for data analysis. The relationships between communication style and academic performance, e-learning and academic performance, and student satisfaction and academic performance were found to be significant. However, institutional support moderated the relationship between student satisfaction and academic performance, but no moderation effect was reported between communication style, e-learning, and academic performance. The implications of the study and future research avenues are given at the end of the paper.

Keywords

1. Introduction

Higher education institutions are considered to be the strongest pillar of growth of any nation, whose performance relies on the success of students. To achieve success in a highly dynamic environment, students are not only supposed to acquire knowledge but expected to possess skills and endeavor. Several factors have been identified that can negatively impact the academic performance of students including excessive usage of social media, quality of academic activities, family and social association, and a rapidly changing and challenging environment. For instance, the desired academic performance was compromised during the COVID era from 2019 to 2022 and a clear lack in performance was highlighted due to the lockdown and education activities were conducted online. These factors and other sources related to academic issues also cause higher levels of stress among students that negatively influence academic performance (**Abbas *et al.***, 2021).

Academic performance is referred to as an exhibition of knowledge and skills that are developed in students at the school level and embedded in the personalities of students at a higher education level that contributes at the national level through competitive advantage. Various aspects that contribute to academic performance, even the lighting in classrooms, are also found to be relevant in academic performance and development (**Oselumese *et al.***, 2016). The poor lights in

classrooms cause discomfort; and result in poor academic performance. Previous studies have verified that poor lighting negatively impacts the performance of students. Another study has been conducted to determine the effect of lights and ventilation on children's academic abilities. The authors highlighted the processing speed, concentration, logical reasoning, and capabilities to solve problems to determine academic performance (**Hviid et al.**, 2020).

A higher quality of education is necessary for predicting academic performance, as literature has identified the techniques for predicting academic achievement through analysis of factors that influence academic success. The students come across different crucial experiences, challenges, and changes in social circles; further, the exams create tension among students that puts mental health at stake. A significant majority of students face depression in life that negatively impacts academic performance (**Khan; Abbas**, 2022). It has been reported that 1/3rd of students face severe depression during student life as compared to general people, and students with limited social class tend to be helpless. Depressed students are likely to get lower grades, fearing failure, unfairness, and an uncertain future. Students have low self-esteem due to various challenges and projects that damage their educational career (**Nguyen; Wright**, 2019).

Higher education institutions consist of academies, colleges, institutes, and universities that face competition in quality, accurate, quality, and competitive HR that is useful in society and encourages the universities to enhance the quality of services. The quality of education leads to the satisfaction of students at the university level, which further contributes to producing good-quality graduates (**Yusoff et al.**, 2015). The retention of clients at the university and acquiring students ensure sustainability as the result of providing quality education to the major stakeholders.

The higher education institutions are service providers and students are consumers; the satisfaction of consumers is considered when expectations exceed what is received. The experience of students determines satisfaction in education and educational services received when perceived performance meets or exceeds expectations shaped by repeated experience at university (**Guilbault**, 2016). It has been stated in the literature that various factors impact the satisfaction level of students at higher education institutions, including personal factors, quality of teachers, assessment, and learning experience; further, student satisfaction is categorized into cognitive and affective satisfaction (**Fieger**, 2012). Satisfaction is also related to the extent to which students enjoy their stay and study at institutes; and the development of knowledge, skills, and abilities. Satisfaction of students ensures the learning that effectively contributes in organizational operational success. The academic results of students depict the satisfaction level and create a sense of achievement in what they have learnt at institutes, and the marks gained in assessment demonstrate satisfaction and achievement (**Rahman et al.**, 2015).

Literature has embarked on various techniques, including educational games, and reportedly improve the skills, and knowledge compared to digital educational tools and found to be more effective due to diverse educational games. Educational games can improve the satisfaction level of students, there is a clear lack of evidence on the role of educational games and students' satisfaction. The evidence reported the lower quality of education provided through digital tools and educational games. It has been suggested to conduct research studies on different rigid in-depth explorations of relevant theories. Gamification tends to improve autonomy need satisfaction and other types of satisfaction (**Gentry et al.**, 2019). The research findings have reported that gamified courses have better outcomes and higher satisfaction as compared to non-game context courses (**Xi; Hamari**, 2019).

Communication style is an essential element that has to be considered in the education sector for its unique importance, the personality of individuals depicted through their communication style. The researchers have focused on developing of diverse communication styles including management communication style, willingness to communicate, multivariate communication style, and interpersonal communication competency scale. The willingness to communicate has a significant impact on related-outcomes to effective collaboration and learning social networks that tend to predict academic performance. Willingness to communicate is referred as the degree to which the inclination of an individual towards effective communication among diverse people, including friends, acquaintances, and strangers in various working environments that comprised on interpersonal, groups, and internal meetings. The higher willingness to communicate was observed to be more comfortable with initiating, continuing, and strengthening social relationships with new communication partners, but lower willingness to communicate was observed to be reluctant to apt for effective communication with others. The willingness to communicate is reported to be a stronger predictor of desired communication behavior in social life among individuals, groups, and firms. A higher willingness to communicate tends to occupy leadership positions and achieve better performance (**Zoé**, 2023; **Cho et al.**, 2007).

Teaching quality and learning efficiency have gained much importance due to higher competition in the education sector and the adoption of e-learning practices. The instructors focused on developing the e-learning modules to motivate the students by developing an effective e-learning environment that engages students actively in learning. These modules ensure students' independence to learn at their own pace for e-learning. It has become one of the major challenges in motivating the students for the entire learning period. E-learning is effective in learning and teaching practices that influence the learning outcomes (**Panyajamorn et al.**, 2018). E-learning is referred as any learning that is taken through the utilization of inter and intranet technologies. Researchers have reported that various governments have focused on developing a

knowledge-based plan under the National Information Technology policy framework to encourage the usage of IT for educational activities. The Ministry of Information and Communication Technologies plays an important role in integrating e-learning practices in existing institutes for effective learning and performance-related outcomes (**Na *et al.***, 2020).

Although there is a lack of consensus on defining academic performance in higher education, the terms of performance, success, and achievement are being used interchangeably among educational researchers without any specific distinction. There is also an evident lack of operationalization as compared to conceptual definition to explain academic performance in higher education. Hence, there is a clear lack of consensus between expression of academic achievement, competencies, and persistence in higher education. That is, besides assessing the achievement of academic activities, it is also necessary to encompass or represent the acquisition of competencies and their persistence (**York *et al.***, 2019).

It is therefore premised in this study that prior academic achievements are strongly associated with the academic performance of students at universities. Many studies have been conducted on the explanatory role of previous academic achievement and its relation to university-level academic performance. The purpose of the higher education is to embed the generic and specific competencies among participants. There is a need to develop an understanding of academic performance by assessing competencies. There are different stages to assess the competencies of higher education learning processes (**Zlatkin-Troitschanskaia *et al.***, 2015). Past research studies have expressed the need to integrate social and academic practices. Academic performance and degree completion academic programs, or institutional context, and the dropout rate also determine persistence in higher education (**Rodríguez-Hernández *et al.***, 2020).

This current study intends to incorporate the construct of institutional support as a moderator between exogenous and endogenous constructs. Institutional support plays an important role in achieving performance standards. Hence, it is necessary to incorporate such an important factor in determining academic performance. Institutional support refers to employees' perception of how employers value their employees and contribute to enhancing their well-being. Perception of organizational support is found to enhance the sense of employees' obligation and leads them to reciprocate by assisting the firms in achieving objectives and goals. It is associated with creativity, job satisfaction, customer orientation, job performance, and reduced turnover intention (**Vatankhah *et al.***, 2017). This study has identified that support from employers assists employees in fostering personal resources such as intrinsic motivation, positive affectivity, and self-efficacy that led to positive psychological outcomes, including emotional exhaustion. The support from the institution increases the sense of control and the feelings of security (**Bohle *et al.***, 2018).

This research effort intends to determine the academic performance among students of higher education institutions in China. It is argued that communication style, e-learning, and student satisfaction increase academic performance with the moderating effect of institutional support. This study also argues that communication style tends to influence academic performance, e-learning plays an important role in increased academic performance, and student satisfaction also tends to predict academic performance. The moderating role of institutional support is believed to moderate the relationship between communication style and academic performance, e-learning and academic performance, and student satisfaction and academic performance.

2. Literature Review

This section explains the relationship between variables to devise the hypothesized relationships.

2.1. Communication Styles and Academic Performance

Communication is required to coordinate educational activities helping students navigate the world and connect different people. It is crucial for all human, social, and workplace activities. The transmission of ideas, opinions, feelings, attitudes, and facts enable humans to create awareness and increase knowledge and facilitate exchange or information and situational adaptation. Several communication styles have been known to influence students' academic performance, including interpersonal communication style, conversational style, and Information and communication technologies (ICT) enabled styles. Interpersonal communication style is important in human life in every aspect of daily life and heavily relies on interaction among fellows. Interpersonal communication competence is referred to as a person's impression or judgment of one's ability to handle the interpersonal relationship in a communication setting to engage in a clear, useful, and meaningful interaction. The capabilities and competencies of an individual in communication influence the experience, and psychological and physiological traits enabling communication with others. Conversation style is the most common way to communicate, and comprehension of such interaction relies on more elements other than languages (**Shabbir; Ishaq**, 2019; **Basuki**, 2022). Likewise, ICT enabled styles support educational activities at higher education levels and economic sectors as well. Additionally, there are at least four other classification styles namely secure, avoidant, anxious, and disorganized communication styles (**Baquiran *et al.***, 2024) that influence the behavior and patterns in reactions of an individual that are depicted in the workplace and in an educational environment (**Huang**, 2022; **Priadi; Thariq**, 2023).

Adopting new technologies and tools enables students to enhance their learning curve in an internet-enabled environment. The learning environment is going through several changes and transformations; information and communication

technologies promote and support the university teaching through the implementation of diverse approaches that increase the flexibility related to administrative tasks at the university level. The adoption of ICT alters teaching methods, improves teaching quality, and creates interest among students for online training. Innovative initiatives increase the knowledge, skills, and abilities of students through the implementation of online teaching methods and by utilizing the latest equipment for teaching. Teaching practices become worthy and effective through suitable collaboration among different stakeholders, groups, discussion forums, and personalized lessons (**Rodríguez-Abitia; Bribiesca-Correa**, 2021).

Research studies have raised concern over poor investment in ICT negatively affecting student performance. The training for ICT adoption and utilization, too, has little impact on students' results and their performance because despite innovative initiatives and collaborative usage of ICT and acquisition of digital skills, do not enhance the academic performance (**Ben Youssef *et al.***, 2022). On a different angles, the communicative behavior of leaders also provides a new concept to use in future leadership and suggests to focus on communication training efforts (**Bakker-Pieper; de Vries**, 2013). It is also known that high performance depends upon the supportiveness style of the supervisor or principal (**Ibrahim; Mahmoud**, 2017; **Abdulameer *et al.***, 2023). Another study in Jilin Province, China found that sleep and anxiety negatively impact academic performance (**Zhang *et al.***, 2021; **Fernández-Costales *et al.***, 2023). Another study reported that interpersonal communication insignificantly correlated with academic performance and communication openness significantly related to academic performance (**Ismail *et al.***, 2012; **Sançar; Yalçın**, 2022). Hence, personality traits as well as psychological situations closely affect communication styles and therefore may have a stronger conceptual link to influence academic performance outcomes. This study, therefore, argues that communication style may influence academic performance, as stated in the first hypothesis of the study.

H1: Communication Style Influences the Academic Performance among Chinese Higher Education Institutions.

2.2. E-learning and Academic Performance

E-learning encompasses knowledge, skills, abilities, and educational activities earned through the Internet and electronic means, which include the Internet, intranets, extranets, satellite TV, video/audio tapes, or CD ROM. These innovative initiatives increase the chances and opportunities to learn through effective communication and gain education effectively and efficiently. The educational activities earned through e-learning mode include instructions, teaching, coaching, and learning through the utilization of electronic equipment and Internet or electronic media. E-learning is also considered an important factor in providing services through electronic means that bring ease to education for students (**George; Lal**, 2019). E-learning capabilities open the door for intelligence for students and tutors to deliver education.

The current environment demands dynamic changes and initiatives at higher education institutes that are not possible without adopting the latest technologies and equipment based on the Internet. The latest technologies and equipment tend to alter the existing practices and introduce innovative changes to reap the benefits. Higher education institutes can't prosper without the effective implementation of electric facilities to satisfy students' e-learning. E-learning enables higher education institutes to provide distance education in rural areas and equip students with the latest information and knowledge to cater to the issue of limited teachers' availability and their travel to a specific institute (**Barteit *et al.***, 2020). The quality of e-learning matters a lot and received the attention of research scholars and highlighted the phenomenon of e-learning and its success through the maximization of effective system (**Al-Fraihat *et al.***, 2020).

Previous literature has reported e-learning as positively related to performance (**Jabarullah; Iqbal Hussain**, 2019; **Rakic *et al.***, 2020), assessing the emergence of e-learning technologies and implementation in higher education. These studies report that e-learning technologies in Chinese higher education positively affect education quality, collaborative and adaptive learning, for achievement of performance. However, in a study conducted on academic performance and e-learning in Thailand, it was reported that students were motivated for e-learning, but it found a weak and insignificant relationship between e-learning and performance (**Na *et al.***, 2020). This suggests that there is a need to contribute to higher education of China in terms of e-learning initiatives, adoption of ICT development in education, and utilization of hardware and software in higher education (**Sun; Choi**, 2023; **Osadcha *et al.***, 2021). This literature review leads to framing the second hypothesis of the study.

H2: E-Learning Capabilities Influence the Academic Performance among Chinese Higher Education Institutions.

2.3. Student Satisfaction and Academic Performance

Students always strive to be successful in terms of academics and higher education institutions must fulfill the required desire to meet students' expectations as they are ultimate consumers. Student satisfaction is of prime importance for educational institutions, and they must equip students with the latest knowledge, skills, and abilities to retain them. There is also a need to focus on subjective knowledge, experience, and educational services to enhance students' academic performance (**Husein**, 2005; **Guilbault**, 2016; **Zhao**, 2023). Research studies have identified various factors, including personal factors, teachers' quality, teacher self-efficacy, assessment styles, learning experience, and role of transformational leadership in increasing and influencing student performance (**Li; Liu**, 2022). Researchers have also

expressed the increasingly popular phenomenon of game education, which has been found to be effective. However, there are insufficient studies on game education and learning through games that enrich problem-solving abilities, critical thinking, knowledge, skills, and abilities; and shape the behavior of participants. In recent era, gamification-based learning has gained importance as it is significant for student satisfaction (**Yan**, 2023; **Pinem; Listyorini**, 2022).

Studies have also suggested to investigate innovative teaching methods for student satisfaction (**Yu et al.**, 2021). The overall satisfaction has been assessed through perceived performance, blended learning benefits, and engagement with flipped learning (**Fisher et al.**, 2021). The teacher-learning process and online learning experience further influence student satisfaction and success at different higher education level. The strong relationship between readiness of students for e-learning and student performance is also depicted. The quality of e-learning and the readiness of students, academics, and e-teachers continuously improve the teaching-learning process (**Bazargan**, 2023; **Mateos-Moreno; Gallego-García**, 2022). Quality education encourages students to remain attached and enables higher education institutes to achieve sustainability (**Arif et al.**, 2013). Due to higher competition to achieve differentiation and to attract a large number of students, most education institutes adopt market-oriented strategies, which help in satisfying the existing students to some extent (**Hanssen; Solvoll**, 2015). These quality graduates not only help the higher education institutes to meet the expectations and needs of the market, but also achieve student satisfaction, which leads to student loyalty, student motivation, and satisfaction (**Annamdevula; Bellamkonda**, 2016). Student motivation is very important in their learning process, and education-quality services increase teaching effectiveness and improve educational outcomes (**Yamani et al.**, 2017). This leads to test the third, hypothesis of the study.

H3: Students' Satisfaction Influence Academic Performance among Chinese Higher Education Institutions

2.4. Moderating Role of Institutional Support

This study incorporated institutional support as a moderating variable, which was argued to be an effective moderator between exogenous and endogenous constructs. Organizational support is referred to as the perception of employees, the extent to which employers value their employees and regard their contribution and well-being of employees. Institutional support was observed to be responsive toward a sense of obligation and assist the firms in achieving their goals and objectives. Institutional support influences organizational creativity, increases job satisfaction and customer orientation, reduces turnover, and increases job performance (**Vatankhah et al.**, 2017). Past studies have determined the phenomenon of emotional exhaustion influenced by fear of COVID, job insecurity, and the role of organizational support and mindfulness to deliver out of these challenges, making organizational support a significant moderator between job insecurity and emotional exhaustion (**Chen; Eyoun**, 2021; **Alturise**, 2022).

Organizational support has also been incorporated as a moderator between workplace bullying and burnout, which collectively predict employee well-being (**Hayat; Afshari**, 2021). This study reported that organizational support moderated the relationship between workplace bullying and employee well-being significantly. In another study on organizational support, it was predicted that innovative work behavior in an organization supportive environment significantly mediated the relationship between leader-member exchange and innovative work behavior (**Qureshi et al.**, 2020). Organizational support is also found significant in enhancing employee engagement, which suggests that organizational support is necessary for positive behavioral outcomes (**Rasool et al.**, 2021). Thus, in the context of the current study, following moderated hypothesized relationships between organizational support and the study construct are argued to be tested.

H4: Institutional support moderates the relationship between communication style and academic performance.
H5: Institutional support moderates the relationship between e-learning and academic performance.
H6: Institutional support moderates the relationship between student satisfaction and academic performance.

Figure 1 presents the research framework and hypotheses between variables.
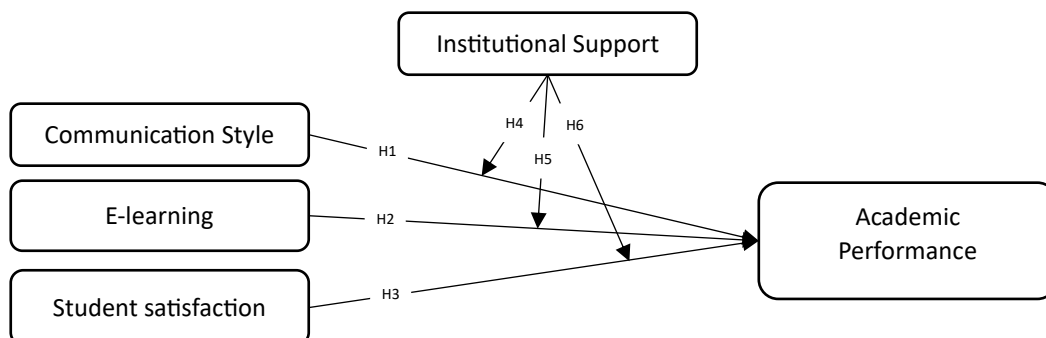

Figure 1: Research Framework.

Figure 1 presents the main variables of the study as the endogenous construct is academic performance and exogenous constructs are communication style, e-learning, student satisfaction and moderating variable is institutional support.

3. Research Methodology

This study adopted a quantitative research design with sample comprising students of different universities in China. A simple random sampling technique was employed for data collection as the unit of analysis were individual students. The sample size was 385, according to (**Krejcie; Morgan**, 1970) table. To ensure a suitable number of responses, doubled sample size questionnaires were floated, and the response rate was observed to be 60%, and 305 complete responses were recorded.

Academic performance is a crucial phenomenon and is influenced by various factors, so it was chosen as the endogenous variable of the study. the exogenous constructs included communication style, e-learning, student satisfaction, while institutional support played a moderating role between exogenous and endogenous constructs. The appropriate way to employ a survey questionnaire method to collect data from Eastern and Western Chinese students' opinions and experiences was through Google Forms and social media platforms (**Turnbull** *et al.*, 2020).

The measurement scales were adopted from previous studies. The measurement scale of academic performance consists of four items and was taken from the research paper of **Deng** *et al.* (2022). The measurement scale of communication style consists of 12 items and is adopted from the study of **Cho** *et al.* (2007). The seven-item measurement scale of e-learning was taken from the study of **Rasheed** *et al.* (2022). The six-item measurement scale of student satisfaction was taken from the research **Subandi and Hamid** (2021). The five-item measurement scale of institutional support was taken from the study (**Yan-li**, 2023; **Setyoko** *et al.*, 2022).

4. Results

Right at the outset. The study addressed the validity and reliability of the constructs. The PLS algorithm method was utilized to determine the required test in Smart-PLS4. The reliability and validity of the constructs are determined on the basis of Cronbach alpha; and composite reliability and validity are determined by the average variance extract (AVE). Table 1 demonstrates the result of the measurement model assessment and presents the values for Cronbach alpha, CR, and AVE that should be greater than 0.70 and 0.50 respectively (**Hair Jr** *et al.*, 2014).

Table 1: Reliability and Validity.

Constructs	Cronbach Alpha	CR	AVE
AP	0.846	0.859	0.685
CS	0.917	0.929	0.521
EL	0.921	0.930	0.680
SS	0.931	0.942	0.750
IS	0.902	0.899	0.729
Note: Academic Performance (AP), Communication Style (CS), e-learning (EL), Student satisfaction (SS), Institutional Support (IS).			

The values as shown in Table 1 meet the criteria for reliability and validity according to the given standards. All the values satisfy the criteria of reliability and convergent validity. Figure 2 presents the measurement model assessment extracted from Smart-PLS4.
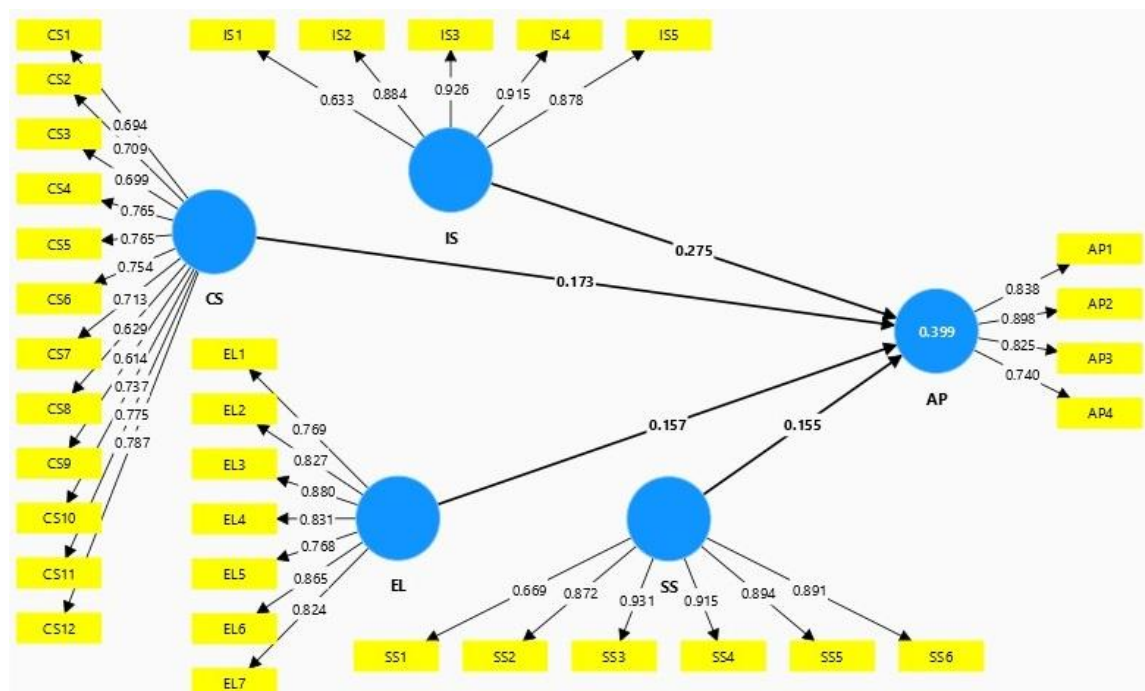

Figure 2: Measurement Model Assessment.
Note: Academic Performance (AP), Communication Style (CS), e-learning (EL), Student satisfaction (SS), Institutional Support (IS)

The discriminant validity was also determined and its results are presented in Table 2. The intersectional values are square root of AVE and remaining values are correlations. The correlational values must be smaller than square root for acceptable discriminant validity (**Fornell; Larcker**, 1981). Table 2 shows that discriminant validity is achieved and acceptable to procced to the next hypothesis testing stage.

Table 2: Discriminant Validity.

Constructs	AP	CS	EL	IS	SS
AP	**0.827**				
CS	0.481	**0.722**			
EL	0.502	0.591	**0.824**		
IS	0.569	0.511	0.591	**0.854**	
SS	0.518	0.477	0.512	0.725	**0.866**
Note: Academic Performance (AP), Communication Style (CS), e-learning (EL), Student satisfaction (SS), Institutional Support (IS)					

The next step in the research process was to investigate the relationship between variables depicted in the framework and hypothesized statements. Three direct and three indirect moderating hypotheses were required to be tested. The bootstrapping method of Smart-PLS 4 was utilized for hypothesis testing. The hypotheses were examined on statistical grounds that the p-value should be lower than 0.05, and t-statistics must be higher than 1.68 with 10% error margin or 1.96 with 05% error margin. Table 3 below presents the results of the hypotheses.

Table 3: Results of Hypothesized Relationships.

Relationship	β	t-stat	p-value
CS→AP	0.133	1.867	0.062
EL→AP	0.122	1.962	0.045
SS→AP	0.237	2.466	0.014
CS*IS→AP	0.097	1.415	0.157
EL*IS→AP	0.001	0.018	0.985
SS*IS→AP	0.234	3.173	0.002
Note: Academic Performance (AP), Communication Style (CS), e-learning (EL), Student satisfaction (SS), Institutional Support (IS).			

Table 3 shows the results of all hypotheses. Hypothesis 1 investigates the relationship between communication style and academic performance, which means that effective communication style is crucial to predict academic performance. The results made it evident that communication style played an important role in achieving academic performance. Hence, there was a need to address and ensure effective communication styles to enhance academic performance. The relationship between communication style and academic performance was measured significant at 10% error margin due to a diverse sample. Hence, hypothesis 1 was accepted.

Hypothesis 2 examined the relationship between e-learning and academic performance. E-learning is the usage of electronic means to provide educational services. It has been established that using e-learning tends to predict and influence performance-related outcomes. There is a dire need to adopt e-learning practices at the university level to provide education and equip students with knowledge, skills, and abilities. The adoption of e-learning practices tends to enhance academic performance. The result shows that e-learning significantly influences academic performance. Hence, hypothesis 2 was also accepted.

Hypothesis 3 investigated the relationship between student satisfaction and academic performance. It was established that student satisfaction also leads to academic performance, as it tends to enhance academic performance. Student satisfaction and academic performance are thus found related closely and statistically significant. Hypothesis 3 was also accepted showing that student satisfaction significantly predicts academic performance.

Hypothesis 4 investigated the moderation effect of institutional support on the relationship between communication style and academic performance. The researcher argues that communication style and institutional support influence academic performance. Institutional support is observed to be an essential element contributing to academic performance. So, institutional support has no moderation effect on the relationship between communication style and academic performance. So, hypothesis H4 is rejected on statistical grounds that no moderation effect is reported. Hypothesis H5 investigated the moderation effect of institutional support between e-learning and academic performance. This study argues and the literature establishes that e-learning leads to various performance-related outcomes. So, institutional support plays an important role in determining academic performance but has no moderation effect on the relationship between e-learning and academic performance. Hence, hypothesis 5 was rejected. Likewise, Hypothesis 6 investigated the moderation effect of institutional support between student satisfaction and academic performance. It was argued that institutional support moderates the relationship between student satisfaction and academic performance. A significant moderation effect of institutional support on the relationship between student satisfaction and academic performance was found. Hence, Hypothesis 6 was accepted.

CONCLUSION

This paper depicted the indicators of academic performance, such as communication style, e-learning, and student

satisfaction, with a moderation role of institutional support. The study established the argument that communication style played an important role in the academic field; e-learning is a requirement of the modern era to provide education as the education industry has adopted the latest equipment and practices to provide the education to enrich the knowledge, skills, and abilities. The study concludes that student satisfaction is necessary to enhance performance, and this study depicts that student satisfaction should be the prime objective. The findings report that communication style, e-learning, and student satisfaction predict academic performance. However, institutional support has no moderation effect on the relationship between communication style, e-learning, and academic performance. However, a significant moderation effect is reported on the relationship between student satisfaction and academic performance. The study suggested ensuring effective communication styles, adopting e-learning practices, and achieving student satisfaction for academic performance.

This study will have fruitful implications for higher education institutes in ensuring academic performance in China. The Republic of China is a big education market for local and international students. Academic performance is an essential concern for educational institutes, and striving for excellence is the prime objective of education service-providing institutes. There is a dire need to adopt effective communication styles to provide education and coordinate with stakeholders. Effective communication styles enable education institutes and management to coordinate and disseminate knowledge among students. E-learning has a significant influence on academic performance. During COVID-19, education institutes initiated online educational activities and faced challenges, but using electronic equipment for education has become essential. Further, achieving student satisfaction and institutional support is necessary for academic performance. The study was limited in explaining the phenomenon of academic performance; it incorporated communication styles, e-learning, and student satisfaction. Other variables can also be used to explain the phenomenon. The sample size can also be increased and grouped among local and international students to depict the true picture of academic performance.

Acknowledgment

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