Determinants of Students' Retention in Open Online Flexible Distance Learning Higher Education Institutions

Zahir Osman
Faculty of Business & Management Open University Malaysia
Corresponding Author Email: zahir_osman@oum.edu.my

Aliza Ali
Faculty of Education Open University Malaysia
Email: aliza_ali@oum.edu.my

Raziana Che Aziz
Faculty of Technology and Applied Sciences Open University Malaysia
Email: raziana@oum.edu.my

Fatimah Yusoof
Faculty of Social Sciences & Humanities Open University Malaysia
Email: fatimah51@oum.edu.my

Abstract
The study highlights the importance of student retention in Open Online Distance Learning (OODL) Higher Education Institutions, as it ensures sustained enrollment, enhances institutional reputation, and improves graduation rates. The research aims to assess the direct relationship between student satisfaction, prompt feedback, lecturers' quality, course design, and academic support services with students' retention in open online flexible distance learning higher education institutions. The researchers conducted surveys to collect primary data, carefully selecting reliable and valid measurements based on a thorough review of previous research. A total of 588 surveys were distributed, and 476 were returned, resulting in a satisfactory response rate of 81%. Out of the returned surveys, 433 were considered clean and appropriate for analysis. The researchers utilized Smartpls4 software for data analysis and hypothesis testing. The study proposed five hypotheses, and the results confirmed a significant relationship between academic support services, course design, lecturers' quality, prompt feedback, student satisfaction, and student retention. Future research could explore the specific needs of diverse student populations and conduct longitudinal studies to track

student experiences beyond the first year. The findings have implications for policymakers, Higher Education Institutions (HEIs), and students. Policymakers can develop policies that promote student well-being and address equity gaps, while HEIs can improve their teaching practices, course design, and support services to create a more student-centered learning environment.

Keywords: Satisfaction, Prompt Feedback, Lecturers' Quality, Course Design, Academic Support Services, Retention

Introduction

Student retention is crucial for Open Online Distance Learning (OODL) Higher Education Institutions as it ensures sustained enrollment, enhances institutional reputation, and improves graduation rates. Universities worldwide struggle to retain students, so it is important to identify the factors that may improve retention levels (Al Hassani & Wilkins, 2022). As student retention was defined as the ability of an institution to retain a student from admission through graduation (Haverila, et al., 2020). Retention, on the other hand, refers to the ability of an institution to keep students enrolled from admission through to the completion of their studies. Retention also indicates the effectiveness of educational delivery, supporting students' success and contributing to the overall credibility and sustainability of OODL programs (Osman et al., 2018). Globally, student retention trends highlight a growing concern about equity and access. Disparities exist between student groups, with first-generation students and those from underrepresented backgrounds facing higher dropout rates (Ekanem & Igwe, 2020). The rise of online learning also presents unique challenges for student retention (Xu & Jaggars, 2021). Understanding how to effectively support online learners and foster a sense of belonging in a virtual environment remains an ongoing area of exploration (Wickneswary et al., 2024). Research gaps still exist in our understanding of student retention. While the factors discussed above are well-researched, a deeper dive into the specific needs of diverse student populations is needed. Additionally, longitudinal studies that track student experiences beyond the first year can provide valuable insights into the long-term factors influencing retention (McNair & Kezar, 2023). This research is highly significant for various stakeholders. Policymakers can utilize this knowledge to develop policies that promote student well-being and address equity gaps in higher education. HEIs can use the findings to improve their teaching practices, course design, and support services, ultimately creating a more student-centered learning environment. Finally, understanding these factors can empower students to advocate for their needs and seek out resources that enhance their academic experience and increase their chances of success (Li et al., 2020). By focusing on student satisfaction and the interconnected web of factors influencing it, HEIs can create a more positive and supportive learning environment for all students. This, in turn, can lead to improved retention rates, a more diverse and thriving student body, and ultimately, a more successful higher education landscape. This study aims to assess the direct relationship between student satisfaction, prompt feedback, lecturers' quality, course design, and academic support services with students' retention in open online flexible distance learning higher education institutions.

Underpinning Theory

Tinto's Theory of Student Integration provides a comprehensive framework for understanding the factors that influence student retention in higher education. According to Tinto (1993), students' persistence is significantly impacted by their academic and social integration within

the college environment. Academic integration is closely linked to the quality of lecturers, course design, and prompt feedback. High-quality teaching and well-structured courses enhance students' academic engagement and understanding, leading to greater satisfaction (Tinto, 1993). Prompt feedback plays a crucial role in this process by helping students track their progress and stay motivated, thus fostering a stronger connection to their academic work (Tinto, 1993). On the other hand, social integration involves students feeling a sense of belonging and community within the institution. Academic support services are vital in this context, as they help students overcome challenges and navigate their academic journey, thereby enhancing both academic and social integration (Tinto, 1993). Overall student satisfaction, encompassing experiences with lecturers, course design, and support services, is a critical component of Tinto's theory. When students perceive their educational experience as valuable and supportive, they are more likely to persist (Tinto, 1993). By applying Tinto's Theory of Student Integration, the study can effectively examine how satisfaction, prompt feedback, lecturers' quality, course design, and academic support services directly impact student retention.

Relationship between Academic Support Services and Students' Retention
Academic support services are increasingly recognized as a vital factor influencing student retention in higher education. Recent research explores the positive long-term effects these services can have on student success. Lundstrom and Baker (2023), directly investigated this connection, demonstrating that access to academic support services can have lasting positive impacts on student outcomes. While not directly focused on support services, Pascarella and Terenzini's foundational work (2020) provides valuable context. Their research on student experiences in higher education highlights the potential for support services to address challenges that might otherwise contribute to student dropout. Tinto's classic dropout model (2020) further strengthens this argument by identifying a student's sense of academic integration as a key factor in retention. Academic support services can play a crucial role in fostering this integration by providing resources and guidance that help students navigate academic challenges. Academic support services can identify and address academic challenges early, preventing minor issues from becoming major obstacles. The link between academic support services and deeper learning is also noteworthy. Although Zepke and Leachman's (2020), research concentrates on course design's role in promoting deep learning, it indirectly highlights the potential for support services to contribute. Tutors, advisors, and other support staff can offer assistance that deepens students' understanding of course material, potentially increasing engagement and reducing dropout rates. The specific context of online education is addressed by (Museus and Palmer, 2021). Their study examines the role of academic support services in online settings and finds a positive connection to student retention. This suggests that providing readily accessible support structures is particularly important for online learners who may face unique challenges. Finally, Bailey and Kuh (2023), offer a direct analysis of the impact these services have on student persistence and graduation rates. Their research confirms that access to academic support services has a clear positive influence on these crucial retention metrics. Therefore, the following hypothesis was proposed for this study:

> *H1: There is a relationship between academic support services and students' retention*
> *In open online flexible distance learning higher education institutions*

Relationship between Course Design and Students' Retention
Effective course design is emerging as a critical factor in promoting student retention within higher education institutions. Studies directly explore this connection, with Eather et al. (2022) finding that well-designed courses hold a stronger influence on student engagement and perceived quality compared to instructor ratings. This highlights the importance of crafting courses that foster active learning and student involvement. Xu and Jaggars (2021), further emphasize this point in the context of online education, demonstrating how well-designed online courses can significantly improve retention rates. Course design can also indirectly impact retention by influencing how students engage with the material. Zepke and Leachman (2020) explore this concept, highlighting how strategic course design can promote deeper learning through engaging assessment practices. A deeper understanding of the subject matter can lead to increased student motivation and potentially lower dropout rates (Kebah et al., 2019). Supporting this notion are frameworks like the Open University Learning Design Framework proposed by Weller et al (2020), which emphasizes designing courses that encourage active learning. Similarly, Bates' influential guide (2023), offers practical advice on incorporating these design principles, fostering student engagement, and potentially improving retention. Finally, McInnis et al (2021), contribute to the discussion by investigating blended learning approaches, which combine elements of online and in-person instruction. Their research suggests that the mode of delivery itself may not be the biggest factor, but rather the quality of course design within the chosen format that impacts student retention. Thus, the following hypothesis was proposed for this study:

H2: There is a relationship between course design and students' retention in open online flexible distance learning higher education institutions

Relationship between Lecturer's Quality and Students' Retention
Effective lecturers employ a variety of teaching strategies to accommodate different learning styles, making the material accessible and interesting to a diverse student body (Tsai et al., 2021). They provide clear and constructive feedback, which helps students understand their progress and areas for improvement. This personalized attention can boost students' confidence and academic performance, making them more likely to continue their studies (Richardson & Alvarez-Garcia, 2020). Moreover, lecturers who build strong rapport with their students contribute significantly to retention (Kebah et al., 2019). Professors are key for student retention because they are the advisers, guides, and models who offer students the necessary tools so they can complete their studies successfully (Barbara, 2020). When students feel valued and supported by their instructors, they are more likely to feel a sense of belonging and commitment to their educational journey (Pascarella & Terenzini, 2020). This sense of connection can be especially crucial for first-year students adjusting to the demands of higher education (Astin, 2020). In contrast, poor lecturer quality can lead to disengagement, frustration, and ultimately, higher dropout rates (Tinto, 2020). Institutions that prioritize recruiting, training, and retaining high-quality lecturers are more likely to see improved student retention rates, as students are more inclined to stay when they feel their educational experience is valuable and rewarding (Ikanem & Igwe, 2020). Hence, the following hypothesis was proposed for this study:

H3: There is a relationship between lecturers' quality and students' retention in open

online flexible distance learning higher education institutions
Relationship between Prompt Feedback and Students' Retention

Prompt feedback is emerging as a powerful tool for enhancing student learning and retention in higher education. Bangert and Blaschke's (2022), meta-analysis provides compelling evidence, demonstrating that receiving timely feedback can significantly improve both learning outcomes and student retention rates. This aligns with the broader understanding of effective assessment practices, as explored in Butler's (2020), work. By incorporating prompt feedback mechanisms, educators can create a more dynamic and formative assessment environment. Furthermore, foundational texts by Hattie (2020), and Nicol (2021), emphasize the power of effective feedback in general. When feedback is timely and specific, it allows students to adjust their learning strategies and improve their understanding of the material. This deeper engagement can lead to increased motivation and ultimately, lower dropout rates. The concept of formative assessment, highlighted by Weigle (2020), is particularly relevant. Formative assessments often involve providing prompt feedback on ongoing learning activities, allowing students to course-correct throughout the learning process. This focus on continuous improvement can contribute to a more positive learning experience and potentially reduce the risk of discouragement and dropout. Finally, Xu and Jaggars' (2021), research explores the role of instructor feedback, potentially including prompt feedback, in the specific context of online education. Their findings suggest that providing timely and constructive feedback is particularly important for online learners, who may face unique challenges in gauging their understanding. Therefore, the following hypothesis was proposed for this study:

H4: There is a relationship between prompt feedback and students' retention
In open online flexible distance learning higher education institutions

Relationship between Students Satisfaction and Students' Retention

Student satisfaction and retention in higher education are intricately linked, with a growing body of research exploring this relationship. One key factor is the moderating role of institutional support services, as identified by (Cao and Yang 2023). Their research suggests that robust support systems can strengthen the positive connection between satisfaction and retention. When students encounter challenges, readily available resources can help them navigate difficulties and maintain a sense of satisfaction with their academic journey. Another contributing factor is student engagement. Burns and Nystrand's (2020), longitudinal study of first-year students demonstrates a positive link between engagement and satisfaction. By fostering active participation in learning activities, institutions can contribute to a more fulfilling educational experience for students. Conrad and Astin (2021), highlight the importance of student satisfaction in influencing a student's decision to stay enrolled. Factors such as strong academic advising or a vibrant campus community can ultimately contribute to lower dropout rates. Hu and Zepeda (2022), explore the mediating role of academic motivation. Their research suggests that when students feel satisfied with their educational experience, their academic motivation increases, leading to greater persistence and retention. McNair and Kezar (2023), support this notion by analyzing the long-term effects of first-year seminar programs, which can enhance student satisfaction and academic purpose, ultimately increasing retention. Finally, Trigwell and Harvey's (2020), review explores the connection between teaching quality and student retention. High-quality teaching practices can lead to higher levels of student satisfaction. Satisfied students are more likely to be

engaged and persistent in their studies, ultimately reducing dropout rates. Thus, the following hypothesis was proposed for this study:

H4: There is a relationship between students' satisfaction and students' retention in open online flexible distance learning higher education institutions
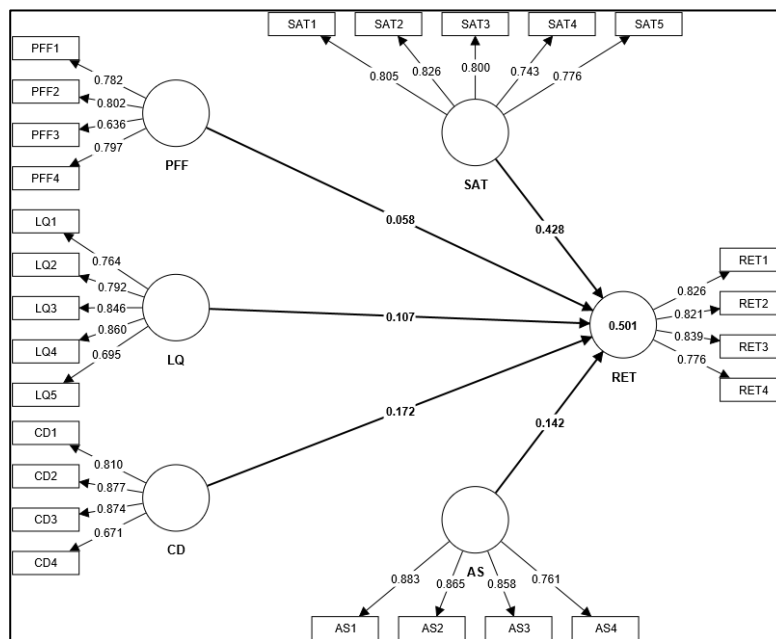

Figure 1: Research Model
Note: PFF=Prompt Feedback   LQ=Lecturer's Quality   CD=Course Design
 AS=Academic Support Services   SAT=Satisfaction   RET=Retention

Methodology
This study aimed to thoroughly assess the direct impact of student satisfaction, prompt feedback, lecturers' quality, course design, and academic support services on student retention in open online flexible distance learning higher education institutions. To achieve this goal, researchers conducted surveys to collect primary data, carefully selecting reliable and valid measurements based on a thorough review of previous research. The survey questionnaires were distributed via email to selected participants using purposive sampling, due to the absence of a comprehensive population list. A total of 26 observed variables were examined, including exogenous variables such as academic support services, adopted from Joseph & Blair (2011), (4 items); course design, adopted from Bangert (2004), (4 items); lecturers' quality, adopted from Bangert (2004) (5 items); prompt feedback, adopted from Bangert (2004) (4 items); and student satisfaction, adopted from Bangert (2004), (5 items). The endogenous variable of student retention was adopted from Alison (2004), (4 items). Respondents assessed elements within each construct using a Likert scale with five response options, ranging from strongly disagree to strongly agree. Out of 588 surveys distributed, 476 were returned, resulting in a satisfactory response rate of 81%, suitable for structural equation modeling (SEM) data analysis. Of the returned surveys, 433 were considered clean and appropriate for analysis. Researchers utilized Smartpls4 software for data analysis and hypothesis testing, chosen for its robust capabilities in structural equation modeling (SEM) and expertise in multivariate data analysis. This choice aligned with the study's objectives and adhered to Ringle et al (2022), recommendations. Smartpls4 enabled a detailed evaluation of

the proposed hypotheses and a comprehensive analysis of both measurement and structural models.

Data Analysis

Respondents' Profile

The analysis of the respondents' profiles based on the provided table reveals several key insights. Regarding gender, there are 156 male respondents, making up 36.0% of the total sample, while the female respondents' number 277, comprising 64.0%, indicates that females represent a larger proportion of the sample. In terms of age, the majority of respondents, 195 individuals or 45.0%, are under 30 years old. The 31 – 40 years age group includes 172 respondents, representing 39.7% of the total. Those aged 41 – 50 years number 56, making up 12.9% of the sample, while the 51 – 60 years and over 60 years groups are smaller, with 6 respondents (1.4%) and 4 respondents (0.9%) respectively. Examining the years of study, 125 respondents (28.9%) are in their first year, and 76 respondents (17.6%) are in their second year. Third-year students' number 112, accounting for 25.9% of the sample, while fourth-year students total 71, making up 16.4%. Fifth-year students are 22 in number, representing 5.1% of the sample, and those studying for more than five years are 27, comprising 6.2%. The level of study indicates that 61 respondents (14.1%) are at the diploma level, and the majority, 273 respondents (63.0%), are pursuing a bachelor's degree. Those enrolled in a postgraduate diploma program number 34, make up 7.9% of the sample. Respondents at the master's level total 56, representing 12.9%, and those at the doctorate level are 9, accounting for 2.1% of the sample. Overall, the data highlights that the majority of respondents are female, under 30 years old, in their first or third year of study, and pursuing a bachelor's degree.

Common Method Bias

Kock (2015) and Kock & Lynn (2012) introduced an inclusive methodology known as the collinearity test, addressing both vertical and horizontal collinearity aspects. Pathological collinearity is identified when variance inflation factors (VIFs) exceed 3.3, indicating a significant concern for common method bias within the model (Kock & Lynn, 2012). Therefore, if the VIFs obtained from the comprehensive collinearity assessment are below 3.3, it can be concluded that the model is free from common method bias (Kock, 2015). As shown in Table 1, the VIFs from the overall collinearity assessment were found to be below 3.3, confirming the absence of common method bias in the model.

Table 1
Full Collinearity Test

	RET	PFF	LQ	CD	AS	SAT
RET		2.472	2.530	2.558	2.568	1.422
PFF	1.424		1.480	1.480	1.480	1.383
LQ	1.104	1.121		1.090	1.105	1.120
CD	1.273	1.278	1.243		1.099	1.260
AS	1.246	1.246	1.229	0.933		1.241
SAT	1.483	2.505	2.680	0.378	2.669	

Measurement Model

In this study, we adopted the methodology recommended by Hair et al. (2017) to assess each measurement at both the first and second order, identifying items with loadings below the

0.7 threshold. Analyses of construct reliability and validity showed that the Average Variance Extracted (AVE) for all constructs ranged from 0.574 to 0.711, exceeding the 0.5 benchmark, thus indicating strong convergent validity (Hair et al., 2017) (Table 2). Additionally, the composite reliability for all constructs was above 0.7, ranging from 0.760 to 0.878. Cronbach's alpha values for all constructs also exceeded 0.7, ranging from 0.749 to 0.863 (Table 2). To ensure discriminant validity, the initial step involved evaluating cross-loadings to confirm the appropriate representation and measurement of the respective constructs (Table 2). Following this, the Heterotrait-Monotrait (HTMT) ratio was used for further assessment, adhering to the recommended criterion for evaluating discriminant validity in Variance-Based Structural Equation Modeling (VB-SEM) (Henseler, Ringle & Sarstedt, 2015). Table 3 presented the HTMT ratios, original sample, and 95% confidence intervals, confirming compliance with the HTMT threshold of 0.85.

Table 2
Construct Reliability & Validity

Constructs	Items	Loadings	CA	CR	AVE
Academic	AS1	0.883	0.863	0.868	0.711
Support	AS2	0.865			
Services	AS3	0.858			
	AS4	0.761			
Course	CD1	0.810	0.824	0.841	0.660
Design	CD2	0.877			
	CD3	0.874			
	CD4	0.671			
Lecturer	LQ1	0.764	0.853	0.878	0.630
Quality	LQ2	0.792			
	LQ3	0.846			
	LQ4	0.860			
	LQ5	0.695			
Prompt	PFF1	0.782	0.749	0.760	0.574
Feedback	PFF2	0.802			
	PFF3	0.636			
Retention	PFF4	0.797	0.833	0.838	0.666
	RET1	0.826			
	RET2	0.821			
	RET3	0.839			
	RET4	0.776			
Satisfaction	SAT1	0.805	0.850	0.854	0.625
	SAT2	0.826			
	SAT3	0.800			
	SAT4	0.743			
	SAT5	0.776			

Table 3
Hetrotrait-Monotrait (HTMT) Ratio

	AS	CD	LQ	PFF	RET
CD	0.497				
LQ	0.441	0.762			
PFF	0.481	0.631	0.771		
RET	0.504	0.614	0.585	0.561	
SAT	0.417	0.525	0.548	0.538	0.743

Structural Model

In this study, the structural model evaluation followed the methodology outlined by Hair et al. (2017), which involved a thorough examination of pathway coefficients (β) and coefficients of determination (R^2). The Partial Least Squares (PLS) method was utilized, employing 5000 sub-samples to determine the significance level of path coefficients. The results from hypothesis testing, including confidence intervals for path coefficients (beta), corresponding t-statistics, and p-values, are detailed in Table 4. This meticulous analysis provides valuable insights into the significance and robustness of the relationships among the variables within the structural model. The comprehensive hypothesis testing results presented in Table 4 offer a detailed analysis of each hypothesis, highlighting Beta coefficients, T-statistics, P-values, and the final decisions regarding hypothesis support, thereby enhancing the depth and clarity of the study's findings.

The analysis of the hypotheses testing results, as presented in Table 4, reveals significant insights into the relationships between various factors and student retention. For hypothesis *H1*, the relationship between academic support services and retention is supported with a beta value of 0.142, a t-statistic of 2.834, and a p-value of 0.005, leading to its acceptance. This indicates that academic support services positively influence student retention. Hypothesis *H2* examines the impact of course design on retention, which is also supported by a beta value of 0.172, a t-statistic of 3.133, and a p-value of 0.002. The decision to accept this hypothesis underscores the importance of effective course design in enhancing student retention. Hypothesis *H3*, which explores the influence of lecturers' quality on retention, is accepted as well, with a beta value of 0.107, a t-statistic of 1.998, and a p-value of 0.046, suggesting a positive but modest impact of lecturers' quality on student retention. On the other hand, hypothesis *H4*, which investigates the effect of performance feedback on retention, is rejected due to its beta value of 0.058, a t-statistic of 1.127, and a p-value of 0.260. This indicates that performance feedback does not significantly influence student retention in this study. Lastly, hypothesis *H5*, which assesses the relationship between students' satisfaction and retention, is strongly supported with a beta value of 0.428, a t-statistic of 9.671, and a p-value of 0.000. This finding highlights that students' satisfaction is a critical determinant of retention. The effect sizes (f^2), evaluated independently of sample size, follow Cohen's criteria (1992), which classifies them as small (0.020 to 0.150), medium (0.150 to 0.350), or large (0.350 or greater). In this study, the observed effect sizes ranged from small (0.004) to large (0.260). According to Table 4, the Variance Inflation Factor (VIF) values were all below the lenient threshold of 5, with the highest value being 2.219. This acceptable level of collinearity allows for meaningful comparisons and interpretation of coefficients within the structural model. Additionally, the model demonstrates a substantial degree of explained variance for the endogenous construct, indicated by an R^2 value of 0.501 (Figure 1).

Table 4

Hypotheses Testing Results, f^2 & VIF

Hypotheses	Beta	T statistics	P values	f^2	VIF	2.50%	97.50%	Decision
H1: AS -> RET	0.142	2.834	0.005	0.031	1.321	0.040	0.236	*Accepted*
H2: CD -> RET	0.172	3.133	0.002	0.032	1.870	0.063	0.281	*Accepted*
H3: LQ -> RET	0.107	1.998	0.046	0.010	2.219	0.001	0.209	*Accepted*
H4: PFF -> RET	0.058	1.127	0.260	0.004	1.758	-0.040	0.162	*Rejected*
H5: SAT -> RET	0.428	9.671	0.000	0.260	1.417	0.341	0.514	*Accepted*

The evaluation of the model's inference and managerial recommendations was conducted using out-of-sample predictive analysis through the PLSpredict method (Shmueli et al., 2016, 2019). As shown in Table 6, PLS-SEM produced superior Q^2 predictions (>0) compared to naive mean predictions, consistently showing lower RMSE values than the linear model (LM) benchmarks, thus highlighting its predictive capability. Additionally, the RMSE values for PLS-SEM predictions consistently outperformed those of the linear model (LM) benchmarks in all four cases, demonstrating the predictive strength of the proposed model, as detailed in Table 5. The introduction of the Cross-Validated Predictive Ability Test (CVPAT) by Hair et al. (2022) and its integration with PLSpredict analysis by Liengaard et al (2021), are particularly notable. Table 6 further confirms the superior predictive abilities of PLS-SEM, with lower average loss values compared to indicator averages and LM benchmarks, providing additional evidence of its enhanced predictive performance.

Table 5

PLSpredicts

	Q^2predict	PLS-RMSE	LM_RMSE	PLS-LM
RET1	0.393	0.581	0.586	-0.005
RET2	0.301	0.597	0.605	-0.008
RET3	0.329	0.640	0.654	-0.014
RET4	0.248	0.684	0.686	-0.002

Table 6

Cross-Validated Predictive Ability Test

	Average loss difference	t-value	p-value
RET	-0.184	8.336	0.000
Overall	-0.184	8.336	0.000

Ringle and Sarstedt (2016), along with Hair et al (2018), introduced Importance Performance Map Analysis (IPMA) to evaluate the significance and effectiveness of latent variables in explaining acceptance, as elaborated in Table 7. The overall impact on students' retention was most pronounced for students' satisfaction (0.428), followed by course design (0.172), academic support services (0.142), lecturers' quality (0.107), and prompt feedback (0.058), highlighting their relative importance in students' retention. Prompt feedback scored the highest (66.958), while satisfaction had the lowest score (61.290) on a 0-100 scale, indicating better performance for prompt feedback and lower achievement for satisfaction. Despite ranking first in students' retention importance, students' satisfaction displayed the lowest performance. These findings suggest prioritizing strategies to enhance students' satisfaction

among open online flexible distance learning students, potentially improving the overall students' retention in open online flexible distance learning higher education institutions.

Table 7
Importance-Performance Map Analysis

	Total Effect	Performance
AS	0.142	66.966
CD	0.172	63.765
LQ	0.107	66.450
PFF	0.058	66.958
SAT	0.428	61.290

Discussion and Conclusion

Student retention in open online flexible distance learning (OOFDL) institutions hinges on enhancing academic support services, course design, lecturer quality, prompt feedback, and ultimately, student satisfaction. Research by Tinto (1993) highlights the importance of comprehensive support systems. Institutions should offer a variety of resources, including tutoring, academic advising, and mental health support, delivered both synchronously (live) and asynchronously (on-demand) to cater to diverse student needs and schedules. Course design plays a critical role in student engagement. Effective design, as explored by Lundstrom & Bakker (2023), integrates interactive elements like multimedia content, discussion forums, and real-world applications. These elements transform learning from a passive activity into an active and enjoyable experience, fostering deeper understanding and retention. Lecturer quality is another key factor. Investing in continuous professional development focused on online teaching strategies, as advocated by Cao & Yang (2023), equips lecturers with the skills to create a supportive and responsive learning environment. This fosters a sense of connection and trust, which are crucial for student motivation. Prompt feedback is essential for keeping students motivated and on track. Hu & Zepeda (2022), emphasizes the benefits of implementing automated feedback systems and setting clear expectations for timely responses. Regular feedback allows students to identify areas for improvement and adjust their learning strategies accordingly. Finally, student satisfaction is paramount. As Museus & Palmer (2021) suggest, institutions can increase satisfaction by actively collecting and responding to student feedback. This demonstrates a commitment to continuous improvement and fosters a sense of partnership between students and the institution. Additionally, collaborative projects and virtual social events can build a sense of community, further enhancing student satisfaction. These strategies are supported by empirical research. This study found that academic support services, course design, lecturer quality, and student satisfaction all have a significant positive influence on student retention. By investing in these areas, OOFDL institutions can create a more supportive and engaging learning environment, ultimately leading to higher retention rates and student success.

Theoretical Implications

This study sheds light on how these elements contribute to Tinto's Theory of Student Integration. Tinto's theory proposes that student integration, encompassing both academic and social integration, is critical for persistence in higher education. The study likely reveals that factors like prompt feedback, effective course design, and high-quality lecturers directly enhance academic integration. Prompt feedback allows students to gauge their

understanding and adjust their learning strategies, fostering a sense of academic progress. Engaging course design, with interactive elements and real-world applications, keeps students actively involved in the learning process, deepening their academic investment. Furthermore, skilled lecturers who create a supportive environment foster a sense of belonging and connection, promoting academic integration. Additionally, the study might show that robust academic support services, encompassing tutoring, advising, and mental health resources, contribute to both academic and social integration. These services not only provide academic assistance but also potentially connect students with on-campus resources and create a sense of community, furthering social integration. By addressing student satisfaction through these factors, institutions can create a more integrated learning environment, aligning with Tinto's theory and ultimately leading to higher retention rates.

Practical Implications
Understanding the direct relationship between student satisfaction, feedback, lecturers, course design, and support services with retention in open online flexible distance learning (OOFDL) institutions equips institutions with actionable strategies for boosting student success. Firstly, the study emphasizes the importance of prompt and clear feedback. Institutions can implement automated feedback systems for quizzes and assignments, while lecturers should prioritize timely responses to open-ended questions and discussions. Additionally, setting clear expectations for response times ensures students receive the guidance they need to stay on track. Secondly, the research highlights the power of engaging course design. Incorporating multimedia content, interactive forums, and real-world applications transforms passive learning into an active experience. Institutions can provide faculty development opportunities focused on integrating these elements effectively. Thirdly, the study underscores the crucial role of high-quality lecturers. Investing in continuous professional development programs equips lecturers with the skills to create supportive online learning environments. These programs can focus on fostering a sense of community, utilizing online communication tools effectively, and employing engaging online teaching strategies. Fourthly, the research emphasizes the importance of comprehensive academic support services. Institutions should offer a variety of resources, including tutoring, academic advising, and mental health support, delivered both synchronously and asynchronously. This ensures accessibility for students with diverse needs and schedules. Finally, the study underlines the importance of student satisfaction. Regularly collecting and acting upon student feedback demonstrates a commitment to improvement and fosters a sense of partnership. Conducting exit interviews is also important to get vital data for management of retention intentions (Haverila, et al., 2020). Additionally, creating opportunities for student interaction through collaborative projects and virtual social events builds a sense of community, further enhancing satisfaction.

Suggestions for Future Study
Future studies can delve deeper into the specific aspects influencing student satisfaction within OOFDL environments. One avenue could explore the impact of personalized learning experiences on retention. This might involve investigating the effectiveness of adaptive learning technologies or instructors tailoring content based on student needs. Additionally, research could examine the role of learner motivation in online learning. Studies could explore the influence of gamification elements, career-focused course content, or incorporating students' passions into assignments, all aimed at boosting motivation and

persistence. Furthermore, future research could investigate the long-term effects of these factors on student success. Longitudinal studies tracking graduates' career trajectories could shed light on how a positive OOFDL experience translates into post-graduation outcomes. By exploring these areas, researchers can refine our understanding of student retention in OOFDL settings and provide even more targeted strategies for institutions to enhance student success.

Conclusion

This study examining the direct relationship between student satisfaction, prompt feedback, lecturer quality, course design, and academic support services with student retention in OOFDL institutions offers valuable insights aligned with Tinto's Theory of Student Integration. By fostering a more integrated learning environment through these factors, institutions can empower students to succeed. The practical implications highlight the importance of prompt feedback, engaging course design, high-quality lecturers, comprehensive support services, and prioritizing student satisfaction. Future research can explore the nuances of student satisfaction in OOFDL, the role of learner motivation, and the long-term impact of these factors on student success. By continuing to investigate these areas, we can refine strategies for OOFDL institutions to cultivate a thriving learning environment that fosters student retention and paves the way for long-term success.

References

Al Hassani, A. A. & Wilkins, S. (2022). Student retention in higher education: the influences of organizational identification and institution reputation on student satisfaction and Behaviors. International Journal of Educational Management, 36 (6) 1046-1064. doi.org/10.1108/IJEM-03-

Ashby, A. (2004) Monitoring student retention in the Open University: definition, measurement, interpretation and action, Open Learning: The Journal of Open, Distance and e-Learning, 19:1, 65-77, DOI: 10.1080/0268051042000177854

Barbara, F. (2020). Higher Education: Factors and Strategies for Student Retention. HETSOnline Journal 10(2). Retrieved from https://hets.org/ojournal/index.php/hoj/article/view/14/10

Bailey, J., & Kuh, G. D. (2023). The Effects of Academic Support Services on Student Persistence and Graduation Rates. Journal of College Student Retention: Research, Theory, & Practice, 25(3), 425-448.

Bangert, A. W. (2004). The seven principles of good practice: A framework for evaluating online teaching. The Internet and Higher Education, 7(3), 217–232.

Bangert, A., & Blaschke, T. (2022). The Impact of Prompt Feedback on Student Learning and Retention in Higher Education: A Meta-Analysis. Educational Psychology Review, 34(2), 339-370.

Bates, T. (2023). Teaching in a Digital Age: Guidelines for designing teaching and learning. BCcampus Open Education.

Burns, L. D., & Nystrand, M. (2020). Student Engagement and Student Satisfaction: A Longitudinal Study of First-Year Students. Journal of Research on Educational Change, 19(1), 79-103.

Butler, A. C. (2020). Assessing Student Learning in Online and Blended Learning Environments: Creating a Toolbox of Assessment Methods.** Stylus Publishing, LLC.

Cao, Y., & Yang, Y. (2023). The Moderating Role of Institutional Support Services in the Relationship between Student Satisfaction and Retention in Higher Education. Journal of College Student Retention: Research, Theory, & Practice, 25(1), 142-162.

Cohen, J. (1992). A power primer. Psychological Bulletin, 112, 155–159. doi:10.1037/0033-2909.112.1.155

Conrad, D. R., & Astin, A. W. (2021). Student Satisfaction and Persistence: A Review of the Literature. Journal of College Student Development, 62(2), 243-260.

Eather, N., Mavilidi, M. F., Sharp, H., & Parkes, R. (2022). Course design as a stronger predictor of student evaluation of quality and student engagement than teacher ratings. Higher Education, 84(6), 1267-1281.

Ekanem, I. E., & Igwe, E. U. (2020). Factors Influencing Students' Retention in Higher Education Institutions in Developing Countries: A Review of Literature. Journal of Educational Technology & Development Exchange (JETDE), 11(2), 22-35.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). A primer on partial least squares structural equation modeling (PLS-SEM) (2nd ed.). Thousand Oaks, CA: SAGE.

Hair, J.F., M. Sarstedt, C.M. Ringle, and S.P. Gudergan. (2018). Advanced issues in partial least squares structural equation modeling. Thousand Oakes, CA: Sage Publications

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM) (3 ed.). Thousand Oaks, CA: Sage.

Hattie, J. (2020). Visible Learning: Reflections on Feedback.** Routledge.

Haverila, K., & McLaughlin, C. (2020). Variables Affecting the Retention Intentions of Students in Higher Education Institutions: A Comparison Between International and Domestic Students. Journal of International Student, 10(2), 358-382.

Henseler, J., Ringle, C. M., and Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling, Journal of the Academy of Marketing Science, 43(1): 115-135.

Hu, Y., & Zepeda, A. G. (2022). The Mediating Role of Academic Motivation in the Relationship between Student Satisfaction and Retention in Higher Education. International Journal of Educational Research, 110, 101823.

Joseph P. Mazer jmazer@clemson.edu & Blair Thompson (2011) The Validity of the Student Academic Support Scale: Associations with Social Support and Relational Closeness, Communication Reports, 24:2, 74-5, DOI: 10.1080/08934215.2011.622237

Kebah, M., Raju, V., & Osman, Z. (2019). Growth of online purchase in Saudi Arabia retail industry. International Journal of Recent Technology and Engineering, 8(3), 869-872.. ISSN: 2277-3878

Kebah, M., Raju, V., & Osman, Z. (2019). Online purchasing trend in the retail industry in Saudi. International Journal of Recent Technology and Engineering (IJRTE), 8(3), 865-868. ISSN: 2277-3878

Kock, N., & Lynn, G.S. (2012). Lateral collinearity and misleading results in variance-based SEM: An illustration and recommendations. Journal of the Association for Information Systems, 13(7), 546-580.

Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. International Journal of e-Collaboration, 11(4), 1-10.

Li, X. T., Rahman, A., Connie, G., & Osman, Z. (2020). Examining customers' perception of electronic shopping mall's e-service quality. International Journal of Services, Economics and Management, 11(4), 329-346.

Liengaard, B. D., Sharma, P. N., Hult, G. T. M., Jensen, M. B., Sarstedt, M., Hair, J. F., & Ringle, C. M. (2021). Prediction: Coveted, Yet Forsaken? Introducing a Cross-validated Predictive Ability Test in Partial Least Squares Path Modeling. Decision Sciences, 52(2), 362-392.

Lundstrom, K. A., & Baker, R. B. (2023). The Long-Term Impacts of Academic Support Services on Student Outcomes. Journal of College Student Development, 64(2), 222-243.

McInnis, C., James, C., & Xu, D. (2021). Blended learning and student retention: Does mode of delivery matter? International Journal of Educational Technology in Higher Education, 18(1), 1-18.

McNair, T. L., & Kezar, A. (2023). The Long-Term Impacts of First-Year Seminar Programs on Student Satisfaction and Retention. Journal of Higher Education, 94(1), 98-127.

Museus, V. D., & Palmer, M. B. (2021). The Role of Academic Support Services in Promoting Student Retention in Online Higher Education. Journal of Online Learning Research, 7(2), 145-162.

Nicol, D. J. (2021). The Power of Feedback Revisited: The Role of Response to Feedback.** Educational Assessment, Evaluation and Accountability, 46(1-2), 1-16.

Osman, Z., Mohamad, W., Mohamad, R. K., Mohamad, L., & Sulaiman, T. F. T. (2018). Enhancing students' academic performance in Malaysian online distance learning institutions. Asia Pacific Journal of Educators and Education, 33, 19-28.

Pascarella, E. T., & Terenzini, P. T. (2020). How College Affects Students: A Third Decade of Research. Jossey-Bass.

Richardson, M., & Álvarez-García, D. (2020). The role of lecturer–student relationships in student retention and success: A systematic review of the literature. Educational Psychology Review, 32(3), 545-592.

Ringle, C.M., and M. Sarstedt. (2016). Gain more insight from your PLS-SEM results: The importance-performance map analysis. Industrial Management & Data Systems. 116: 1865–1886.

Ringle, Christian M., Wende, Sven, & Becker, Jan-Michael. (2022). SmartPLS 4. Oststeinbek:SmartPLS. Retrieved from https://www.smartpls.com

Tinto, V. (1993). Leaving College: Rethinking the Causes and Cures of Student Attrition (2nd ed.). University of Chicago Press.

Tinto, V. (2020). Dropout from higher education: A theoretical synthesis of recent research. Review of educational research, 45(1), 89-125.

Trigwell, M., & Harvey, L. (2020). Teaching Quality and Student Retention: A Literature Review. International Journal of Teaching and Learning in Higher Education, 32(3), 398-412.

Tsai, M.-F., Wu, Y.-C., & Chen, C.-C. (2021). The Role of Lecturer Quality in Supporting Students' Engagement and Retention in Higher Education. Sustainability, 13(21), 12227.

Weigle III, M. (2020). The role of formative assessment in higher education.** New Directions for Teaching and Learning, 2020(163), 65-74.

Weller, M., Eames, C., & Pimlott, S. (2020). The open university learning design framework. Journal of Applied Learning & Teaching, 1(1), 3-22. [

Xu, D., & Jaggars, S. (2021). The Role of Course Design in Promoting Student Retention in Online Higher Education. Online Learning, 25(2), 301-322.

Xu, D., & Jaggars, S. (2021). The Role of Instructor Feedback in Promoting Student Success in Online Higher Education.** Journal of Online Learning Research, 7(3), 223-242.

Zepke, N., & Leachman, M. (2020). Student engagement with assessment: The role of course design in promoting deep learning. Assessment & Evaluation in Higher Education, 45(3), 442-457.