

Indirect Relationship of Service Quality, Students' Trust, and Students' Loyalty in Open Flexible Distance Learning Higher Education Institutions

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Abstract

Student loyalty in online distance learning higher education institutions is crucial for sustaining enrollment rates, fostering a positive reputation, and ensuring long-term institutional success and financial stability. This study aims to assess indirect relationship of service quality, students' trust, and students' loyalty in Open Flexible Distance Learning (OFDL) Higher Education Institutions. This study collected primary data from individuals enrolled in OFDL higher education institutions through a survey instrument with 31 observed variables, including service quality, trust, and loyalty. Using a non-probabilistic snowball sampling method, yielding an 85.1% response rate. After data screening and outlier removal, 5051 questionnaires remained for analysis. Smartpls4 software was utilized for data analysis, chosen for its evaluation capabilities and suitability for multivariate data analysis. All the

hypotheses testing results were supported proving that trust was a strong mediator in the relationship between service quality and student loyalty. This study significantly advances the literature on OFDL in higher education by validating established theories in service marketing and customer loyalty, emphasizing the enduring importance of service quality and elucidating the mediator role of trust in a virtual learning environment. For administrators, policymakers, and educators, it underscores the need to prioritize and enhance the quality of online educational services, emphasizing transparent communication and community-building efforts. Practitioners and stakeholders can use the findings to refine marketing strategies, improve faculty training programs, and involve students in decision-making processes, fostering a collaborative educational environment. Suggestions for future research include exploring the dynamics of service quality, trust, and loyalty in diverse cultural contexts, investigating the impact of evolving technologies on service quality perceptions, and conducting longitudinal studies to track students over time.

Keywords: Service Quality, Trust, Loyalty, Open Online Flexible Distance Learning.

Introduction

Students' loyalty to open flexible distance learning (OFDL) higher education institutions globally presents a multifaceted phenomenon shaped by various factors including institutional reputation, perceived quality of education, support services, and technological infrastructure (Todea et al., 2022). In these institutions, students often hail from diverse backgrounds and geographical locations, seeking educational opportunities that offer flexibility and accessibility. Despite the physical distance, fostering loyalty among these students remains crucial for institutional sustainability and growth (Snijders et al., 2022). Loyalty in this context extends beyond mere enrollment figures to encompass continued engagement, positive advocacy, and long-term commitment to the institution.

In OFDL higher education institutions, students' loyalty is intricately linked to their satisfaction with the learning experience, including the quality of course materials, interaction with instructors, and access to support services (Mbanggo & NGOBENI, 2022). Moreover, the effectiveness of technological platforms and communication channels significantly influences students' perceptions of the institution and their overall loyalty. Institutions that prioritize responsiveness, personalized support, and innovation in their distance learning offerings are more likely to cultivate loyal student communities (Susilawati et al., 2021). Furthermore, the global nature of these institutions presents opportunities for fostering loyalty through culturally sensitive approaches, tailored support services, and collaborative learning experiences that transcend geographical boundaries (García-Rodríguez & Gutierrez-Tano, 2021). By understanding and addressing the diverse needs of their students, OFDL higher education institutions can build strong, enduring relationships with students worldwide, enhancing loyalty and contributing to their long-term success and impact in the global educational landscape (Dangaiso et al., 2022).

The problem of students' loyalty to OFDL higher education institutions globally stems from several challenges inherent in this educational model. One major issue is the lack of personal connection and sense of belonging typically found in traditional on-campus settings (Mohammed et al., 2023). Distance learners may feel isolated and disconnected from their institution, leading to a decreased sense of loyalty. Additionally, the absence of face-to-face interactions with instructors and peers can hinder the development of strong bonds and

mutual support networks, further exacerbating feelings of detachment (Nguyen et al., 2024). Moreover, the reliance on technology for communication and course delivery introduces potential barriers such as technical glitches, accessibility issues, and digital fatigue, which can negatively impact students' overall satisfaction and loyalty (Galindo-Illanes et al., 2021). Addressing these challenges requires innovative strategies to enhance student engagement, provide robust support services, and foster a sense of community among distance learners, ultimately nurturing greater loyalty to the institution despite the physical distance (Ong et al., 2023).

This study holds paramount significance for policymakers, OFDL higher education institutions, and students alike. Policymakers can utilize its findings to inform the development of regulatory frameworks aimed at enhancing the quality and accessibility of distance learning programs, thereby fostering greater student loyalty and satisfaction. OFDL higher education institutions can leverage insights from the study to refine their educational offerings, support services, and retention strategies, ultimately improving student retention rates and institutional reputation. For students, the study offers valuable insights into the factors influencing their loyalty and satisfaction in distance learning environments, empowering them to make informed decisions about their educational journey. This study aims to evaluate the indirect relationship between service quality, students' trust, and students' loyalty in OFDL higher education institutions.

Literature Review

Underpinning Theory

Relationship Marketing Theory (RMT) Berry (1983), provides a robust framework for examining the intricate dynamics of service quality, students' trust, and students' loyalty within the context of OFDL higher education institutions. RMT emphasizes the cultivation of long-term, mutually beneficial relationships between organizations and their customers. In this context, higher education institutions are viewed as service providers, and students as valued customers whose loyalty is essential for sustained success. RMT posits that service quality plays a pivotal role in shaping customers' perceptions of trust in the institution. As students perceive higher levels of service quality, they are more likely to develop trust in the institution's ability to meet their educational needs and expectations. This trust, in turn, fosters loyalty among students, leading to continued enrollment, positive advocacy, and active engagement with the institution's offerings. By employing RMT as the underpinning theory, researchers can gain valuable insights into the nuanced interplay between service quality, trust, and loyalty in the unique context of OFDL higher education institutions, informing strategic decision-making and enhancing the overall student experience.

Relationship between Service Quality & Students Loyalty

The bond between service quality and students' loyalty is the linchpin of an educational institution's success, underpinning the foundation of a thriving academic community (Mulyono et al., 2020). Service quality represents the amalgamation of various factors, including teaching efficacy, administrative efficiency, facilities, and overall student experience. When students encounter exemplary service quality, characterized by responsiveness, effectiveness, and a genuine commitment to their success, they develop a sense of trust and satisfaction (Borishade et al., 2021). This satisfaction becomes the bedrock upon which loyalty is built. Students who experience high service quality are more inclined to

demonstrate loyalty to their institution, manifested through continued enrollment, positive advocacy, and active engagement in campus life (Subandi & Hamid, 2021). Conversely, subpar service quality can breed dissatisfaction, leading to erosion of loyalty and potential attrition. Therefore, institutions must prioritize delivering exceptional service to foster students' loyalty (Permana et al., 2020). By consistently exceeding expectations, addressing students' needs with empathy, and fostering a culture of continuous improvement, educational providers can nurture a loyal student base. In this symbiotic relationship, service quality catalyzes forging enduring bonds between students and their educational community, creating a cycle of mutual trust, support, and growth that propels both students and institutions towards excellence (DOAN, 2021). Hence, the following hypothesis was proposed for this study:

H1: There is a relationship between service quality and student's loyalty in open flexible distance learning higher education institutions.

Relationship between Service Quality & Students Trust

The relationship between service quality and students' trust forms the cornerstone of a robust educational ecosystem, fostering an environment where students feel supported, valued, and empowered in their learning journey (Singh & Jasial, 2021). Service quality encompasses a spectrum of elements, including the efficacy of teaching, responsiveness of administrative support, accessibility of resources, and overall experience provided by the institution (Latif et al., 2021). When students encounter high service quality, characterized by reliability, responsiveness, and a genuine dedication to their needs, they develop a sense of trust in the institution and its ability to fulfill its promises (Pham et al., 2020). This trust is nurtured through consistent positive experiences, where students feel that their concerns are heard, their needs are met, and their educational goals are supported. Conversely, deficiencies in service quality can erode students' trust, leading to skepticism, dissatisfaction, and a sense of disconnection from the institution (Alkrajji & Ameen, 2022). Therefore, institutions must prioritize delivering exceptional service quality to cultivate and maintain students' trust. By demonstrating a commitment to excellence, transparency, and accountability in all facets of their operations, educational providers can establish a solid foundation of trust with their students. In this symbiotic relationship, service quality acts as the catalyst for fostering a culture of trust, collaboration, and mutual respect between students and their educational institution, creating an environment conducive to academic success and personal growth (Abdullah et al., 2023). Thus, the following hypothesis was proposed for this study:

H2: There is a relationship between service quality and student's trust in open flexible distance learning higher education institutions.

Relationship between Students' Trust & Students Loyalty

The interplay between students' trust and their loyalty is the heartbeat of any vibrant educational community, weaving together a tapestry of mutual respect, commitment, and shared values. Trust, the cornerstone of meaningful relationships, serves as the foundation upon which loyalty flourishes (Snijders et al., 2022). When students trust their educators, peers, and the institution itself, they feel a sense of security, belonging, and confidence in their academic environment. This trust is nurtured through consistent positive experiences, open communication, and a demonstrated commitment to students' well-being and success (Yousaf et al., 2020). In turn, this cultivated trust fosters a deep-seated loyalty among

students, characterized by a steadfast commitment to the institution, active participation in its activities, and advocacy within their social circles (Todea et al., 2022). Loyalty, fueled by trust, becomes the driving force behind students' continued engagement and investment in their educational journey. Conversely, a lack of trust can lead to feelings of detachment, disillusionment, and ultimately, disloyalty (Elistia et al., 2022). Therefore, institutions must prioritize building and maintaining trust with their students as a fundamental pillar of their educational mission. By fostering an environment of transparency, respect, and integrity, educational providers can cultivate a culture of trust that inspires unwavering loyalty among students, propelling both individuals and the institution toward shared success and fulfillment (Amin, 2021). Therefore, the following hypothesis was proposed for this study:

H3: There is a relationship between student's trust and student's loyalty in open flexible distance learning higher education institutions.

Relationship between Service Quality, Students' Trust & Students Loyalty

The intricate relationship between service quality and students' loyalty finds its essence in the mediating role of students' trust, forming a trinity of interconnected elements that shape the educational landscape (Hassan et al., 2020). Service quality, encompassing the efficacy of teaching, responsiveness of administrative support, and overall experience provided by the institution, catalyzes nurturing students' trust. When students encounter high service quality, characterized by reliability, responsiveness, and a genuine commitment to their needs, they develop a sense of trust in the institution and its ability to fulfill its promises (Saoud, & Sanséau, 2019). This trust, in turn, acts as a bridge between service quality and students' loyalty. Students who trust their educational providers are more likely to exhibit loyalty toward the institution, manifesting in continued enrollment, active engagement, and positive advocacy (Flores et al., 2020). Conversely, a lack of trust can erode loyalty, leading to disengagement, attrition, and negative word-of-mouth. Therefore, institutions must prioritize building and maintaining students' trust as a fundamental component of their service quality initiatives (Sultan & Wong, 2019). By fostering an environment of transparency, empathy, and integrity, educational providers can cultivate a culture of trust that serves as a linchpin for fostering enduring loyalty among students, propelling both individuals and the institution toward mutual growth and success (Tammubua, 2021). Hence, the following hypothesis was proposed for this study:

H4: There is a mediating effect of student's trust on the relationship between service quality and students' loyalty in open flexible distance-learning higher education institutions.

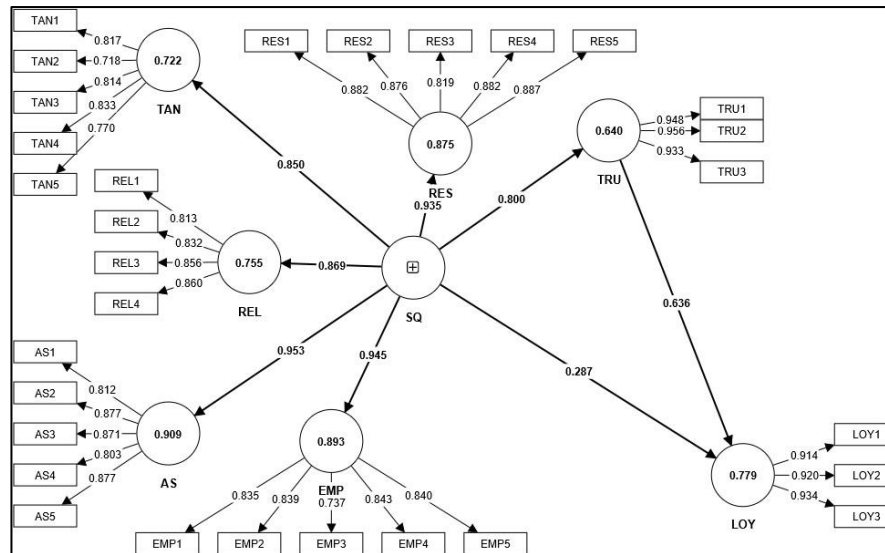


Figure 1: Research Model

Methodology

This study focused on individuals enrolled in OFDL higher education institutions, employing primary data gathered through survey instruments. The survey questionnaire, meticulously crafted based on prior research for reliability and validity, encompassed 31 observed variables, including both exogenous and endogenous measurements. Exogenous variables covered constructs such as service quality (Parasuraman et al., 1988) and trust (Cronin & Taylor, 1992) as a mediator, adapting measurement items from established studies. Loyalty (Evanschitzky & Wunderlich, 2006) served as the endogenous variable, evaluated using specific measurement items. Respondents used a five-point Likert scale to rate each measurement item. Utilizing a non-probabilistic snowball sampling method, 5118 out of 6015 distributed questionnaires were collected, yielding an 85.1% response rate. Table 1 shows the respondents' profile of this study. Following data screening and outlier removal, 5051 questionnaires remained for analysis. For data analysis and hypothesis testing, Smartpls4 software, chosen for its evaluation capabilities and suitability for multivariate data analysis, was employed, aligning with the guidelines proposed by Ringle et al. (2022). The comprehensive capabilities of Smartpls4 facilitated thorough multivariate data analysis, ensuring effective hypothesis testing in line with the study's objectives.

Table 1

Respondents' Profiles

		Frequency	Percent
Gender	Male	1451	28.7
	Female	3600	71.3
Semester	1	2831	56.0
	2	858	17.0
	3	580	11.5
	4	342	6.8
	5	175	3.5
	6	95	1.9
	7	56	1.1
	8	38	0.8
	9	28	0.6
	10	21	0.4
	11	7	0.1
	12	8	0.2
	13	6	0.1
	14	2	0.0
	15	2	0.0
	16	1	0.0
	17	1	0.0
Faculty	FBM	1258	24.9
	FOE	2295	45.4
	FSSH	468	9.3
	FTAS	1030	20.4
	Total	5051	100.0

Data Analysis

The collinearity test, introduced by Kock (2015) and Kock & Lynn (2012), provides a comprehensive assessment of both vertical and horizontal collinearity. Detection of problematic collinearity is based on variance inflation factors (VIFs) exceeding 3.3, indicating a potential common method bias challenge within the model. The total collinearity assessment reveals VIFs below 3.3 in Table 1, signifying the absence of common method bias in the model, in line with the proposed approach by Kock (2015) and Kock & Lynn (2012).

Table 1

Full Collinearity Test

	MLOY	MSQ	MSAT
MLOY		3.150	3.175
MSQ	3.207		3.023
MTRU	2.847	3.090	3.197

Inner Model

This study followed the approach recommended by Hair et al. (2017) to evaluate each measurement in both the first and second orders, facilitating the identification of items with loadings below the critical threshold of 0.7. The initial presentation of the specified model

(Figure 1) highlighted construct reliability and validity results, revealing certain items with loadings below 0.7 and lacking significance. Consequently, the Average Variance Extracted (AVE) values for leadership style and perceived behavioral control fell below the 0.5 threshold. After removing problematic items with loadings less than 0.7, the model was re-specified (Figure 2). Revised construct reliability and validity assessments showed AVE values for all constructs exceeding 0.5 (Table 3), ranging from 0.656 to 0.894, affirming convergent validity (Hair et al., 2017). Composite reliability for all constructs remained above 0.7, ranging from 0.930 to 0.962. Additionally, Cronbach alpha values for all constructs exceeded 0.7, ranging from 0.912 to 0.941 (Table 3). To establish discriminant validity, cross-loadings were initially assessed to ensure proper representation and measurement of each item within its respective construct (Table 5). Further evaluation using the Hetrotrait-Monotrait (HTMT) ratio, recommended for examining discriminant validity in Variance-Based Structural Equation Modeling (VB-SEM) (Henseler, Ringle & Sarstedt, 2015), confirmed compliance with the HTMT threshold of less than 0.9 (Table 4). The bias-corrected and accelerated bootstrap confidence intervals, below 1, reinforced confidence in the distinctiveness of the constructs and their ability to measure different aspects of the investigated phenomenon.

Table 3

Construct Reliability & Validity

	CA	CR	AVE
LOY	0.913 (0.904, 0.920)	0.945 (0.940, 0.949)	0.851 (0.839, 0.862)
SQ	0.912 (0.907, 0.917)	0.930 (0.927, 0.934)	0.656 (0.644, 0.669)
TRU	0.941 (0.933, 0.946)	0.962 (0.958, 0.965)	0.894 (0.883, 0.902)

Note: CA=Cronbach Alpha CR=Composite Reliability AVE=Average Variance Extracted CI 95% bootstrap confidence interval

Table 4

Hetrotrait-Monorait Ratios (HTMT)

	LOY	SQ
SQ	0.850 (0.834, 0.865)	
TRU	0.890 (0.886, 0.898)	0.844 (0.841, 0.848)

Note: CI 95% bootstrap confidence interval

Table 5

Cross Loadings

	AS	EMP	LOY	REL	RES	TAN	TRU
AS1	0.812	0.713	0.591	0.613	0.671	0.606	0.602
AS2	0.877	0.740	0.654	0.720	0.734	0.719	0.658
AS3	0.871	0.736	0.628	0.689	0.723	0.724	0.625
AS4	0.803	0.748	0.641	0.623	0.767	0.618	0.649
AS5	0.877	0.801	0.695	0.699	0.785	0.703	0.701
EMP1	0.733	0.835	0.652	0.646	0.758	0.695	0.650
EMP2	0.766	0.839	0.673	0.642	0.809	0.641	0.686
EMP4	0.750	0.843	0.612	0.621	0.721	0.627	0.615
EMP5	0.756	0.840	0.629	0.638	0.734	0.663	0.635
LOY1	0.690	0.698	0.914	0.635	0.707	0.630	0.759
LOY2	0.684	0.679	0.920	0.615	0.692	0.625	0.772
LOY3	0.721	0.725	0.934	0.673	0.738	0.655	0.860
REL1	0.646	0.624	0.565	0.813	0.634	0.656	0.559
REL2	0.706	0.665	0.605	0.832	0.667	0.666	0.610
REL4	0.653	0.640	0.590	0.860	0.668	0.661	0.599
RES1	0.804	0.824	0.700	0.696	0.882	0.700	0.697
RES2	0.744	0.771	0.654	0.620	0.876	0.636	0.655
RES3	0.690	0.709	0.628	0.701	0.819	0.654	0.634
RES4	0.788	0.786	0.695	0.712	0.882	0.709	0.699
RES5	0.744	0.781	0.679	0.651	0.887	0.663	0.680
TAN1	0.681	0.641	0.574	0.645	0.637	0.817	0.577
TAN2	0.558	0.529	0.457	0.482	0.523	0.718	0.451
TAN2	0.558	0.529	0.457	0.482	0.523	0.718	0.451
TAN3	0.623	0.644	0.540	0.593	0.624	0.814	0.531
TAN4	0.651	0.636	0.577	0.682	0.638	0.833	0.575
TAN5	0.631	0.635	0.577	0.696	0.632	0.770	0.586
TRU1	0.707	0.712	0.838	0.662	0.715	0.640	0.948
TRU2	0.729	0.734	0.829	0.663	0.738	0.660	0.956
TRU3	0.729	0.730	0.787	0.663	0.745	0.657	0.933

Structural Model

In this study, the assessment of the structural model involved the concurrent evaluation of pathway coefficients (β) and coefficients of determination (R^2), following the methodology outlined by Hair et al. (2017). The Partial Least Squares (PLS) method was applied, utilizing 5000 subsamples to determine the significance level of path coefficients. The results of hypothesis tests, including confidence intervals, path coefficients (beta), associated t-statistics, and p-values, are comprehensively presented in Table 6. This detailed analysis provides valuable insights into the significance and robustness of the relationships among the variables within the structural model (Hair et al., 2017). The hypotheses in this study were rigorously tested, and the results, as depicted in Table 6, indicate strong support for all formulated hypotheses. Starting with Hypothesis 1 (H1), which posited a relationship between service quality and loyalty, the beta coefficient of 0.287 was found to be significant ($t = 17.139$, $p = 0.000$), confirming a positive relationship between service quality and loyalty. Therefore, H1 is supported. Similarly, Hypothesis 2 (H2) proposing a direct influence of service quality on

trust demonstrated robust support with a substantial beta coefficient of 0.800 ($t = 58.774$, $p = 0.000$). Thus, H2 is supported. Hypothesis 3 (H3) explored the relationship between trust and loyalty, revealing a notable beta coefficient of 0.636 ($t = 37.087$, $p = 0.000$), providing strong evidence for the positive impact of trust on loyalty. Hence, H3 is supported. Hypothesis 4 (H4) hypothesized that there is a mediating effect of trust on the relationship between service quality and loyalty. The statistical result showed that trust significantly and positively mediated the relationship between service quality and loyalty. With a beta coefficient of 0.509 ($t = 34.07$, $p = 0.000$) signifies the significance of the mediating relationship. Hence, H4 is supported. relationship. The analysis conducted in the study provided substantial evidence to support all of the hypotheses, confirming the relationships among the variables under investigation. A summary of the hypothesis testing results is presented in Table 6, including the effect size, which measures the magnitude of an effect independently of the sample size. Effect sizes in this study were assessed using Cohen's criteria (1992) and categorized as small (0.020 to 0.150), medium (0.150 to 0.350), or large (0.350 or greater). The observed effect sizes ranged from small (0.114) to large (0.624). The intrinsic variance inflation factor (VIF) values, displayed in Table 6, were all below the more lenient threshold of 5, with the highest value being 2.579. This level of collinearity allows for meaningful comparisons of sizes and interpretation of coefficients in the structural model. The endogenous construct exhibited a substantial degree of explained variance, with an R^2 value of 0.779 (Figure 1). Regarding the mediator, the model accounted for approximately 64.0% of the variance in the structure, as evidenced by an R^2 value of 0.640. These R^2 values provide valuable insights into the amount of variance explained by the model and its ability to predict the observed outcomes. (Figure 1).

Table 6

Hypotheses Testing Results, f^2 & VIF

Hypotheses	Beta	T Statistics	P Values	f^2	VIF	2.50 %	97.50 %	Decision
H1: SQ -> LOY	0.287	17.139	0.000	0.114	2.579	0.231	0.288	Supported
H2: SQ -> TRU	0.800	58.774	0.000	0.624	1.26	0.767	0.796	Supported
H3: TRU -> LOY	0.636	37.087	0.000	0.52	2.46	0.630	0.692	Supported
H4: SQ -> TRU -> LOY	0.509	34.07	0.000			0.491	0.542	Supported

The model's ability to make inferences and provide management suggestions was evaluated through out-of-sample predictive analysis using the PLSpredict method, as described by Shmueli et al. (2016, 2019). In Table 7, Q^2 predictions higher than 0 indicated that the predictions made by PLS-SEM outperformed the standard naive mean prediction results. Additionally, the root mean square error (RMSE) values of the PLS-SEM predictions were lower than those of the linear model (LM) prediction benchmark in five out of six instances, indicating the predictive power of the proposed model (Table 7). Hair et al. (2022) introduced the Cross-Validated Predictive Ability Test (CVPAT) as a means to assess the predictive capabilities of Partial Least Squares Structural Equation Modeling (PLS-SEM) results. Lienggaard et al. (2021) introduced the Cross-Validated Predictive Ability Test (CVPAT) for PLS-SEM model comparison, further extended by Sharma et al. (2022) to evaluate predictive capabilities.

CVPAT gauges model performance through out-of-sample predictions, comparing average loss values with benchmark indicator averages (IA) and a linear model (LM). A negative difference indicates PLS-SEM's anticipated lower average loss (Table 8). The test substantiates superior predictive prowess if the difference in average loss values is significantly below zero, validating PLS-SEM's effectiveness compared to benchmarks (Liengard et al., 2021; Sharma et al., 2022).

Table 7

PLSpredicts

	Q ² predict	PLS-RMSE	LM-RMSE	PLS-LM
LOY1	0.536	0.541	0.542	-0.001
LOY2	0.515	0.575	0.576	-0.001
LOY3	0.586	0.453	0.455	-0.002
TRU1	0.561	0.456	0.459	-0.003
TRU2	0.591	0.448	0.449	-0.001
TRU3	0.591	0.485	0.483	0.002

Table 8

Cross Validated Predictive Ability Test (CVPAT)

	Average loss difference	t-value	p-value
LOY	-0.328	25.914	0.000
TRU	-0.302	24.956	0.000
Overall	-0.364	38.185	0.000

In addition, Ringle and Sarstedt (2016) and Hair et al. (2018) recommended using Importance Performance Map Analysis (IPMA) to evaluate the significance and effectiveness of latent variables in explaining acceptance. The findings in Table 9 reveal the impact of various latent variables on loyalty. Service quality exhibited the strongest influence on loyalty (0.802), followed by trust (0.625), indicating their relative importance in the loyalty context. In terms of performance scores, trust achieved the highest score (85.887), while service quality had the lowest score (82.773) on a scale from 0 to 100. Despite being the most critical factor for loyalty, service quality demonstrated a lower performance level. Consequently, the recommendation for top management in Open and Distance Learning (ODL) higher education institutions is to prioritize activities aimed at improving students' service quality, as enhancing service quality is crucial for overall improvement in students' loyalty.

Table 9

Important-Performance Map Analysis

	Total Effect	Performance
SQ	0.802	82.773
TRU	0.625	85.887

Discussion & Conclusion

The study's robust findings, confirming the significant impact of service quality on students' loyalty with students' trust as a mediator, underscore the pivotal role of strategic initiatives for OFDL HEIs. To optimize the effectiveness of service quality, institutions should prioritize continuous enhancement of educational delivery mechanisms, ensuring seamless online

experiences and user-friendly interfaces. Investing in technological infrastructure and providing comprehensive support for students navigating virtual learning environments can enhance overall service quality. Additionally, fostering transparent communication channels and maintaining responsiveness to student needs are crucial components for building trust. Establishing a strong online community where students feel connected and supported contributes to the development of trust and positively influences loyalty. Institutions must prioritize faculty training programs to ensure educators are adept at utilizing online tools and creating engaging virtual classrooms. Moreover, implementing feedback mechanisms and promptly addressing concerns further enhances service quality perception and, consequently, trust and loyalty. Recognizing the intrinsic link between service quality, trust, and loyalty, institutions should employ targeted marketing strategies to communicate these attributes to prospective students. Collaborative efforts with students in co-designing courses and incorporating their feedback can enhance the perceived value of services, nurturing trust and loyalty. Ultimately, an institution-wide commitment to a student-centric approach, technological innovation, and proactive communication strategies will fortify the foundations for sustained trust and loyalty in the dynamic landscape of OFDL higher education. Furthermore, OFDL higher education institutions can leverage technology for personalized learning experiences tailored to individual student needs. Implementing adaptive learning platforms and data analytics can help identify areas for improvement and provide targeted interventions. Offering robust student support services, such as virtual counseling and academic advising, can enhance the overall service quality and build a foundation of trust. Institutions should also prioritize the development of clear and consistent policies regarding online course delivery, assessment methods, and communication protocols to instill confidence in students. Transparent communication on program offerings, accreditation, and faculty credentials can contribute to trust-building initiatives. Moreover, establishing a strong online presence through social media platforms and interactive forums can foster a sense of community among students, promoting trust and loyalty. Encouraging student engagement in decision-making processes, such as curriculum design or program improvements, empowers them and reinforces a collaborative partnership. Regularly soliciting feedback and actively responding to concerns demonstrate a commitment to continuous improvement and student satisfaction.

Theoretical Implications

The theoretical implications drawn from the study underscore significant contributions to the existing literature on OFDL in higher education. Firstly, the confirmed positive association between service quality and students' loyalty, mediated by trust, aligns with established theories in service marketing and customer loyalty. This validates the applicability of foundational concepts such as the Service Quality (SQ) - Trust (TRU) - Loyalty (LOY) model, reinforcing its relevance in the context of OFDL. The study extends theoretical understanding by specifically addressing these dynamics within the unique setting of online education, emphasizing the enduring importance of service quality in engendering student loyalty. Additionally, the mediator role of trust elucidates the intricate mechanism through which service quality influences loyalty, shedding light on the nuances of student perceptions and interactions in a virtual learning environment. The study contributes to trust theory by emphasizing its pivotal role in the educational domain, serving as a mediator that transforms perceived service quality into sustained student loyalty. This nuanced theoretical framework provides a foundation for future research to explore the intricate interplay of these

constructs, informing the development of comprehensive models specific to the evolving landscape of OFDL.

Contextual Implications

The contextual implications of this study are particularly relevant for administrators, policymakers, and educators involved in OFDL higher education institutions. The confirmed influence of service quality on students' loyalty, mediated by trust, underscores the imperative for institutions to prioritize and enhance the quality of their online educational services. Institutions should invest in technological infrastructure, faculty training, and support services to create an environment that fosters trust and loyalty among students. Moreover, the findings highlight the significance of transparent communication and community-building efforts in the virtual space. Policymakers can utilize these insights to shape regulations and guidelines that encourage the integration of effective online teaching practices and student support services. Educators, too, can leverage this knowledge to refine their instructional approaches and establish strong connections with students in the digital realm. Overall, the study offers actionable insights that can inform strategic decision-making and operational practices within OFDL institutions to better meet the evolving needs of students in the online education landscape.

Practical Implications

The practical implications derived from this study offer valuable guidance for practitioners and stakeholders in OFDL higher education institutions. Recognizing the pivotal role of service quality in shaping student loyalty, institutions should prioritize ongoing improvements in online educational delivery, technology infrastructure, and user-friendly interfaces. Investing in faculty training programs to enhance online teaching capabilities and providing comprehensive student support services will contribute to building a positive service quality perception. Clear and transparent communication, coupled with community-building initiatives in the virtual space, becomes essential for cultivating trust and fostering student loyalty. Institutions can utilize the findings to refine their marketing strategies, emphasizing service quality attributes to attract and retain students. Furthermore, the study underscores the importance of involving students in decision-making processes, creating a collaborative and responsive educational environment. These practical insights offer a roadmap for institutions to enhance their service quality, build trust, and ultimately cultivate enduring loyalty among students engaged in OFDL programs.

Suggestions for Future Study

For future studies, researchers could delve into the dynamics of service quality, trust, and loyalty in diverse cultural contexts within OFDL. Exploring how cultural factors influence these relationships may provide nuanced insights into global education settings. Additionally, investigating the impact of evolving technologies, such as artificial intelligence and virtual reality, on service quality perceptions and subsequent trust and loyalty in online education could be a pertinent avenue. Longitudinal studies tracking students over an extended period would offer a deeper understanding of the sustainability of these relationships. Exploring the role of individual differences, such as learning styles and preferences, could further enhance our understanding of the nuanced interplay among service quality, trust, and loyalty in the dynamic landscape of OFDL.

Conclusion

This study underscores the critical role of service quality in influencing students' loyalty within OFDL, with trust serving as a mediator. The study confirms that all the hypotheses testing results were supported proving that trust was a strong mediator in the relationship between service quality and student loyalty. The robust empirical findings affirm the theoretical underpinnings of service quality, trust, and loyalty models in the context of online education. Practical implications suggest institutions prioritize technology infrastructure, transparent communication, and faculty training. Contextual implications highlight the relevance of these findings for administrators, policymakers, and educators involved in online higher education. As a call for future research, exploring cultural influences, technological advancements, and individual differences can further enrich understanding of the intricate dynamics shaping student experiences in OFDL environments.

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