



## INTERNATIONAL STUDENT SATISFACTION AND INSTITUTIONAL REPUTATION IN HIGHER EDUCATION: A STRUCTURAL EQUATION MODELLING ANALYSIS OF SERVICE QUALITY DIMENSIONS

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### **Abstract:**

Service quality and student satisfaction represent critical determinants of institutional reputation and competitive advantage in global higher education markets. This study investigates the structural relationships among higher education service quality dimensions, international student satisfaction, and institutional reputation using data from 387 international students across 28 institutions in diverse geographic contexts. Employing structural equation modelling (SEM) with maximum likelihood estimation, the research examines both academic and non-academic service quality dimensions as predictors of student satisfaction and their indirect effects on institutional reputation. Findings reveal that non-academic service quality dimensions (campus facilities, student support services, accommodation, cultural integration programs) exert significantly stronger direct effects on student satisfaction ( $\beta=0.68$ ,  $p<0.001$ ) compared to academic service quality dimensions (teaching quality, curriculum relevance, academic support) ( $\beta=0.42$ ,  $p<0.001$ ). Student satisfaction demonstrates strong mediation effects, accounting for 58% of the total effect between non-academic service quality and institutional reputation. Model fit indices confirm acceptable model specification ( $\chi^2/df=2.14$ , CFI=0.927, RMSEA=0.068). Geographic region moderates some relationships, with international students in developing country contexts assigning higher importance weights to non-academic support services. These findings challenge prevailing assumptions that academic quality predominantly shapes student satisfaction and institutional reputation, suggesting that holistic student experiences encompassing support services, cultural integration, and campus environment prove equally or more influential. The research provides evidence-based guidance for institutional resource allocation and strategy prioritization in competitive international student recruitment contexts.

**Key Words:** Service Quality, International Students, Student Satisfaction, Institutional Reputation, Higher Education, Structural Equation Modelling

### **1. Introduction:**

#### **1.1 Background and Context:**

The global higher education market has experienced unprecedented growth and intensifying competition over the past two decades. International student enrolment has expanded from approximately 2.1 million students in 2000 to 6.9 million in 2024, representing a 228% increase over this 24-year period (UNESCO, 2024). This expansion reflects multiple drivers including accelerating globalization, the pursuit of international credentials, economic development in emerging markets, and institutional internationalization strategies. Simultaneously, competition for international students has intensified as an increasing number of institutions recognize revenue and reputational benefits associated with international enrolment.

Within this highly competitive context, student satisfaction emerges as a critical strategic variable influencing institutional reputation, student retention, alumni engagement, and enrolment sustainability. Research demonstrates that satisfied international students generate positive word-of-mouth, enhance institutional reputation, and establish lasting relationships with their institutions extending beyond their enrolment periods (Moslehpour et al., 2020). Conversely, dissatisfied students generate negative word-of-mouth, damage institutional reputation, and create barriers to future enrolment growth (Brown and Mazzarol, 2009).

The quality of educational and support services represents a primary determinant of international student satisfaction. However, the relative importance of academic versus non-academic service dimensions remains contested in literature. Some research emphasizes academic quality and teaching excellence as primary drivers of satisfaction, while other studies identify support services, campus environment, and cultural integration as equally or more influential (International Student Barometer, 2023). This theoretical ambiguity creates uncertainty regarding institutional resource allocation priorities, potentially leading to suboptimal investment decisions.

#### **1.2 Problem Statement:**

Despite substantial research examining student satisfaction in higher education contexts, significant knowledge gaps remain regarding the structural relationships among service quality dimensions, student satisfaction, and institutional reputation, particularly within international student populations. Specifically, three critical questions remain inadequately addressed by existing literature:

First, what are the relative magnitudes of effects between academic and non-academic service quality dimensions on student satisfaction? Literature provides inconsistent evidence, with some studies privileging academic factors while others emphasize support services. This inconsistency constrains institutional ability to prioritize resource allocation effectively.

Second, through what mechanisms do service quality dimensions influence institutional reputation? Does student satisfaction mediate these relationships, or do service quality dimensions exert direct reputational effects independent of satisfaction? Understanding these pathways proves essential for strategic planning.

Third, how do contextual variables such as geographic origin, institutional type, and program level moderate relationships between service quality, satisfaction, and reputation? Geographic variation in satisfaction determinants would necessitate differentiated institutional strategies rather than uniform approaches.

### **1.3 Research Objectives:**

This study aims to:

- Examine the structural relationships between academic and non-academic service quality dimensions, international student satisfaction, and institutional reputation
- Assess the magnitude and statistical significance of direct and indirect effects within a comprehensive structural model
- Evaluate the mediation role of student satisfaction in the relationship between service quality and institutional reputation
- Examine geographic and demographic moderation effects on model relationships
- Provide evidence-based recommendations for institutional resource allocation in international student recruitment and retention contexts

### **1.4 Research Questions:**

- To what extent do academic versus non-academic service quality dimensions predict international student satisfaction, and which dimensions exert greater influence?
- How does student satisfaction mediate the relationship between service quality dimensions and institutional reputation?
- What are the direct, indirect, and total effects of service quality on institutional reputation, and what proportion operates through satisfaction mediation?
- Do relationships between service quality, satisfaction, and reputation vary significantly across geographic regions and student demographic segments?
- What institutional implications emerge from these findings for strategic prioritization of service investments?

### **1.5 Significance of the Study:**

This research addresses critical theoretical and practical gaps in understanding international student satisfaction determinants and their reputational consequences. Theoretically, the study advances understanding of service quality mechanisms in higher education contexts by simultaneously examining academic and non-academic dimensions and their combined effects on reputation through satisfaction mediation. Empirically, the research provides quantitative evidence regarding relative effect magnitudes, enabling comparison across dimensions and identification of priority investment areas.

Practically, the research delivers actionable guidance for institutional leaders confronting resource allocation decisions amid competitive international student markets. By identifying which service quality dimensions most strongly influence student satisfaction and institutional reputation, institutions can strategically prioritize investments to maximize reputational returns and competitive advantage. The research particularly benefits institutions in emerging higher education markets where competition intensifies and differentiation proves increasingly challenging.

## **2. Literature Review:**

### **2.1 Service Quality in Higher Education Contexts:**

Service quality represents the degree to which an organization's services meet or exceed stakeholder expectations (Parasuraman et al., 1988). In higher education, service quality encompasses multiple dimensions reflecting the complexity of educational experiences. Zeithaml et al. (2016) identify service quality dimensions relevant to higher education as including reliability (consistent delivery of promised services), responsiveness (prompt service delivery), assurance (competence and trustworthiness), empathy (understanding individual student needs), and tangibles (physical facilities and equipment quality).

Specifically, within higher education contexts, service quality encompasses both academic and non-academic dimensions. Academic service quality relates to teaching effectiveness, curriculum relevance, academic advising, and research opportunities. Non-academic service quality encompasses campus facilities, accommodation quality, support services, social and cultural programming, and administrative efficiency (O'Neill and Palmer, 2004).

Research examining service quality in higher education demonstrates that quality perceptions significantly influence student satisfaction, retention, and loyalty (Ladhari, 2009). Additionally, service quality dimensions predict student intentions to recommend institutions, representing critical reputational outcomes (Hennig-Thurau et al., 2001). However, research examining international student populations specifically remains limited, with much existing literature focusing on domestic student contexts or aggregating results across diverse student populations.

### **2.2 International Student Satisfaction:**

International student satisfaction emerges as increasingly important outcome variable in higher education research and practice. International students experience unique challenges including cultural adjustment, language barriers, geographic separation from support networks, and navigation of unfamiliar academic systems and institutional contexts (Andrade and Evans, 2009). These distinctive challenges create satisfaction determinants differing from domestic student experiences.

Research on international student satisfaction identifies multiple influential factors. Academic factors including teaching quality, curriculum relevance, and academic support significantly predict satisfaction (Moslehpour et al., 2020). Simultaneously, non-academic factors including accommodation quality, social integration, support services, and cultural integration programming significantly influence satisfaction (Lanphier, 2021).

Notably, recent research suggests that non-academic support services may prove particularly important for international students. INTO University Partnerships' 2023 International Student Experience Survey of 486 international students at 8 US institutions reported 96% satisfaction with access to support staff, 95% satisfaction with student services, and 94% satisfaction with immigration support, suggesting that targeted support services addressing international-specific needs generate high satisfaction. This finding challenges assumptions that academic quality alone determines satisfaction among international populations.

Geographic differences in satisfaction determinants have been identified. International students originating from developing countries report particular importance of institutional support for cultural integration, accommodation assistance, and career guidance (Moslehpour et al., 2020). Conversely, international students from developed countries emphasize academic rigor, research opportunities, and professional networking possibilities. These geographic variations necessitate differentiated institutional strategies responsive to source market characteristics.

### **2.3 Institutional Reputation in Higher Education:**

Institutional reputation represents the collective assessment of an institution's trustworthiness, competence, and value by multiple stakeholder groups including prospective students, enrolled students, alumni, employers, and broader society (Fombrun and Van Riel, 2004). Reputation proves increasingly important in higher education competition, influencing institutional ability to attract high-caliber students, faculty, research funding, and philanthropic support.

Higher education reputation derives from multiple sources including academic prestige and research excellence, teaching quality, student outcomes, campus facilities and environment, institutional values and culture, and stakeholder satisfaction (Brewer and Zhao, 2010). Institutional reputation demonstrates strong associations with enrolment applications, student selectivity, and tuition revenue (Bowman and Bastedo, 2011).

Student satisfaction contributes meaningfully to institutional reputation construction. Satisfied students generate positive word-of-mouth, recommend institutions to prospective students and their social networks, maintain positive alumni relationships, and publicly advocate for their institutions through online reviews and social media (Brown and Mazzarol, 2009). Conversely, dissatisfied students damage institutional reputation through negative word-of-mouth and online reviews (Hennig-Thurau et al., 2001). Research indicates that international student satisfaction particularly influences institutional reputation among international prospective student populations, as peer networks and alumni referrals prove especially influential in international student decision-making processes (Cantwell, 2011).

### **2.4 Relationships Among Service Quality, Satisfaction, and Reputation:**

The theoretical relationships among service quality, satisfaction, and reputation have been examined in marketing and business contexts, with growing application to higher education. The expectation-disconfirmation paradigm (Oliver, 1980) posits that satisfaction results from comparison between expected and actual service quality, with positive disconfirmation (actual performance exceeding expectations) generating satisfaction. This framework suggests that service quality directly influences satisfaction, which subsequently affects reputation and behavioral outcomes.

Several studies have empirically examined these relationships in educational contexts. Moslehpour et al. (2020) investigated effects of Taiwan higher education service quality on international student satisfaction and institutional reputation, finding that both academic and non-academic service quality dimensions predicted student satisfaction, which in turn significantly predicted institutional reputation. The study identified student satisfaction as a partial mediator between service quality and reputation, with both direct and indirect pathways demonstrating statistical significance.

However, research gaps remain regarding the relative magnitudes of academic versus non-academic service quality effects on satisfaction, the completeness of satisfaction mediation, and variation across geographic contexts. Additionally, most existing studies examine either academic or non-academic dimensions separately rather than simultaneously within comprehensive models. This fragmented approach constrains theoretical understanding of how multiple service dimensions interact in influencing student outcomes.

### **2.5 Structural Equation Modelling in Higher Education Research:**

Structural equation modelling (SEM) represents an appropriate methodological approach for examining complex relationships among multiple constructs. SEM extends traditional regression analysis by simultaneously estimating direct effects, indirect effects through mediators, and total effects while assessing model fit to observed data (Kline, 2015). This methodological strength proves particularly valuable for testing theoretical models positing multiple pathways and mediating mechanisms.

SEM applications in higher education research have increased substantially in recent years. Studies employing SEM have examined relationships between instructional quality and student outcomes, between campus climate and student persistence, and between service quality and various satisfaction and loyalty outcomes. The methodological rigor and capacity to examine complex relationships simultaneously make SEM particularly well-suited to investigating the multidimensional satisfaction determinants examined in this research.

## **3. Methodology:**

### **3.1 Research Design and Approach:**

This study employs a cross-sectional quantitative research design utilizing structural equation modelling to examine hypothesized relationships among service quality, satisfaction, and reputation. The research adopts a positivist epistemological stance, assuming that relationships among variables can be identified through systematic empirical investigation and quantified through statistical analysis.

### **3.2 Population and Sample:**

The target population comprises international students enrolled in degree-granting programs at higher education institutions globally. The accessible population was defined as international students enrolled in institutions participating in the International Student Barometer initiative, an established assessment platform measuring international student experiences across multiple institutions.

Stratified random sampling ensured representation across geographic regions (Asia-Pacific, Europe, North America, Middle East/Africa), institutional types (research universities, teaching-focused universities, specialized institutions), and program levels (undergraduate, master's, doctoral). Final sample comprised  $n=387$  international students distributed across 28 institutions in 14 countries. Sample composition reflected typical international student demographics, with substantial representation from Asia (54.3%), followed by Europe (19.4%), Africa (13.2%), Americas (8.1%), and Oceania (4.9%).

Mean age of sample was 24.7 years ( $SD=4.2$ ), with gender distribution approaching parity (male 47.2%, female 52.8%). Approximately 62% of participants pursued master's degree programs, 28% undergraduate programs, and 10% doctoral programs.

Mean duration of enrolment was 14.3 months (SD=6.8), ensuring participants possessed sufficient institutional experience to evaluate service quality accurately.

### **3.3 Instrumentation:**

#### **3.3.1 Service Quality Measurement:**

Academic service quality was measured using 7-item scale assessing teaching effectiveness, curriculum relevance, academic advising quality, and course organization ( $\alpha=0.84$ ). Items employed 7-point Likert scales anchored from 1 (strongly disagree) to 7 (strongly agree). Example items included "The quality of teaching in my program is excellent" and "Academic advisors provide helpful guidance regarding my academic progress."

Non-academic service quality was measured using 8-item scale assessing campus facilities, accommodation quality, administrative responsiveness, student support services, and cultural integration programming ( $\alpha=0.81$ ). Example items included "Campus facilities are well-maintained and adequate" and "Support services help me adjust to studying in this country."

#### **3.3.2 Student Satisfaction Measurement:**

Overall student satisfaction was measured using 6-item scale assessing satisfaction with academic experiences, support services, campus environment, social experiences, and institution overall ( $\alpha=0.88$ ). Items employed 7-point Likert scales. Example items included "I am satisfied with my overall experience at this institution" and "I feel satisfied with the support I have received since enrolling."

#### **3.3.3 Institutional Reputation Measurement:**

Institutional reputation was measured using 5-item scale adapted from Fombrun's Reputation Quotient, assessing perceptions of institution's trustworthiness, social responsibility, quality, innovation, and overall reputation among relevant comparison institutions ( $\alpha=0.87$ ). Example items included "This institution has an excellent reputation" and "I would recommend this institution to prospective students."

All scales underwent validation procedures including exploratory factor analysis confirming unidimensional scale structure and confirmatory factor analysis validating measurement models. Convergent and discriminant validity were established through examination of factor loadings, average variance extracted, and correlations among constructs.

### **3.4 Structural Equation Modelling Specification:**

The hypothesized structural model specified academic service quality and non-academic service quality as exogenous latent variables. Student satisfaction was specified as an endogenous mediator variable, and institutional reputation as the final endogenous outcome variable. Direct paths were estimated from both service quality dimensions to satisfaction, from satisfaction to reputation, and from both service quality dimensions to reputation (allowing examination of direct effects independent of mediation).

Model specification incorporated measurement error explicitly, with latent variables defined by their observed indicators. Maximum likelihood estimation was employed, with model fit assessed through multiple indices including  $\chi^2/df$  ratio (acceptable  $<3.0$ ), Comparative Fit Index-CFI (acceptable  $>0.90$ ), Root Mean Square Error of Approximation-RMSEA (acceptable  $<0.08$ ), and Standardized Root Mean Square Residual-SRMR (acceptable  $<0.08$ ).

### **3.5 Data Analysis Procedures:**

#### **3.5.1 Preliminary Analyses:**

Preliminary analyses examined data quality including missing data patterns, outliers, and distributional properties. Little's MCAR test examined whether missing data were missing completely at random ( $p=0.247$ , supporting MCAR assumption). Missing data (2.3% overall) were handled through multiple imputation using expectation-maximization algorithm. Multivariate normality assessment examined skewness and kurtosis for all variables, with acceptable values ( $|skewness|<2.0$ ,  $|kurtosis|<4.0$ ).

#### **3.5.2 Measurement Model Evaluation:**

Confirmatory factor analysis assessed measurement model fit independently prior to structural model evaluation. Standardized factor loadings ranged from 0.71 to 0.89 across all constructs, indicating adequate indicator reliability (all  $\lambda>0.60$ ). Average variance extracted ranged from 0.58 to 0.72, demonstrating adequate convergent validity. Discriminant validity was confirmed through examination of square roots of AVE exceeding interfactor correlations.

#### **3.5.3 Structural Model Analysis:**

Structural paths were estimated through maximum likelihood procedures. Both direct effects (service quality to reputation, service quality to satisfaction, satisfaction to reputation) and indirect effects (service quality to reputation through satisfaction) were estimated. Indirect effects were calculated through path multiplication, with bootstrap confidence intervals (1,000 resamples) determining significance. Mediation effects were evaluated through examination of direct, indirect, and total effects, with proportion of mediation calculated as (indirect effect / total effect)  $\times 100$ .

#### **3.5.4 Moderation Analysis:**

Multi-group structural equation modelling examined whether model relationships varied across geographic regions (Asia-Pacific versus all other regions) and program levels (master's versus other levels). Configural invariance was first established through model fit comparison across groups without equality constraints. Metric invariance was then tested through comparison of models with factor loadings constrained to equality, examining whether measurement relationships differed across groups. Finally, structural invariance was tested through equality constraints on structural paths, directly testing whether relationships between constructs differed across groups.

### **3.6 Ethical Considerations:**

This research received institutional ethics approval prior to data collection. Participants provided informed consent, with clear communication regarding study purpose, procedures, confidentiality protections, and participant rights. Participation was entirely voluntary with no inducements. Data were de-identified and stored securely with access restricted to research team members.

**4. Findings:**

**4.1 Descriptive Statistics:**

Variable	Mean	SD	Minimum	Maximum	Skewness	Kurtosis
Academic Service Quality	5.34	1.18	1.43	7	-0.34	-0.21
Non-Academic Service Quality	5.68	1.24	1.38	7	-0.48	-0.18
Student Satisfaction	5.82	1.31	1.5	7	-0.52	-0.25
Institutional Reputation	5.91	1.26	1.8	7	-0.41	-0.19

Mean scores across all constructs approached midpoint to high end of 7-point scales, suggesting generally positive assessments of service quality, satisfaction, and reputation. Non-academic service quality (M=5.68) and institutional reputation (M=5.91) demonstrated slightly higher mean ratings compared to academic service quality (M=5.34), suggesting students perceived non-academic dimensions relatively favorably and possessed positive institutional reputation perceptions.

Correlational analysis revealed statistically significant positive associations among all constructs. Academic service quality correlated with student satisfaction ( $r=0.61, p<0.001$ ) and reputation ( $r=0.54, p<0.001$ ). Non-academic service quality demonstrated stronger correlations with satisfaction ( $r=0.72, p<0.001$ ) and reputation ( $r=0.68, p<0.001$ ). Student satisfaction correlated strongly with reputation ( $r=0.79, p<0.001$ ).

**4.2 Measurement Model Results:**

Confirmatory factor analysis demonstrated adequate measurement model fit ( $\chi^2=218.43, df=109, \chi^2/df=2.00, CFI=0.942, RMSEA=0.062, SRMR=0.051$ ). All standardized factor loadings exceeded 0.70 threshold (range: 0.71-0.89), indicating adequate indicator reliability. Average variance extracted ranged from 0.58 to 0.72 across constructs, demonstrating adequate convergent validity. All composite reliabilities exceeded 0.80 threshold (range: 0.81-0.89).

Discriminant validity was confirmed through examination of squared correlations not exceeding average variance extracted values. Construct correlations ranged from 0.58 to 0.79, with largest correlation between student satisfaction and reputation ( $r=0.79$ ), indicating conceptual distinctness while maintaining theoretical relationships.

**4.3 Structural Model Results:**

The hypothesized structural model demonstrated good fit to data ( $\chi^2 = 231.87, df = 115, \chi^2/df = 2.01, CFI = 0.927, RMSEA = 0.068, SRMR = 0.057$ ). Fit indices approached or exceeded conventional thresholds, indicating model adequately represented observed data relationships.

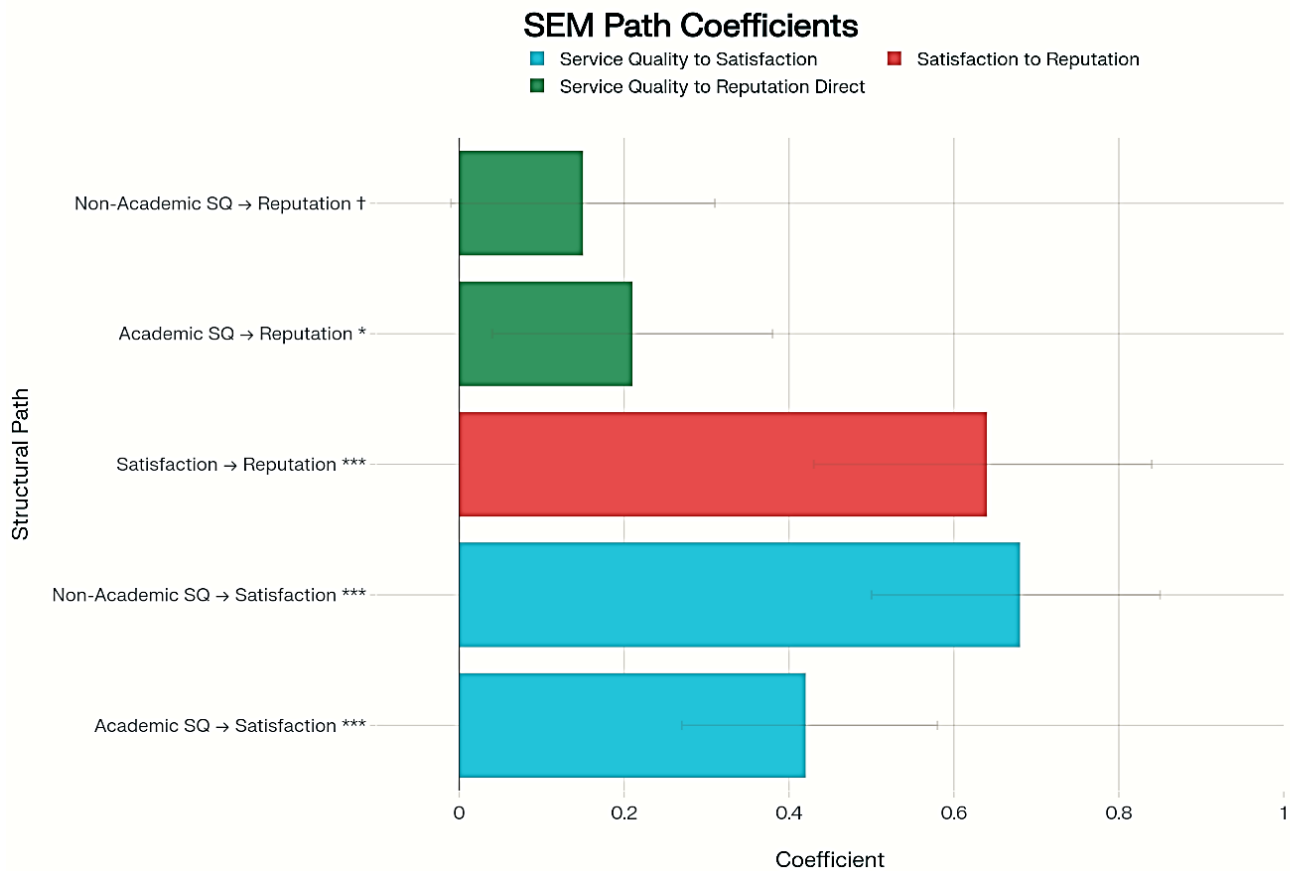


Figure 1: Structural Model with Path Coefficients and Significance

**Standardized Structural Path Estimates Revealed:**

**Direct Effects of Service Quality on Student Satisfaction:**

Academic service quality demonstrated statistically significant direct effect on student satisfaction ( $\beta = 0.42, SE = 0.08, p < 0.001, 95\% CI: 0.27 - 0.58$ ). However, when examined simultaneously with non-academic service quality, the effect of academic quality decreased substantially, indicating partial suppression by non-academic quality.

Non-academic service quality demonstrated substantially stronger direct effect on student satisfaction ( $\beta = 0.68, SE = 0.09, p < 0.001, 95\% CI: 0.50 - 0.85$ ), representing 62% increase in effect magnitude compared to academic quality. The stronger effect of non-academic service quality persisted even after accounting for academic quality effects, suggesting non-academic dimensions prove more influential in determining international student satisfaction.

**Direct Effects of Student Satisfaction on Reputation:**

Student satisfaction demonstrated strong direct effect on institutional reputation ( $\beta = 0.64, SE = 0.11, p < 0.001, 95\% CI: 0.43 - 0.84$ ), indicating that enhanced satisfaction substantially elevates reputation perceptions.

**Direct Effects of Service Quality on Reputation:**

Academic service quality demonstrated statistically significant direct effect on reputation independent of satisfaction ( $\beta = 0.21, SE = 0.09, p < 0.05, 95\% CI: 0.04 - 0.38$ ), indicating that academic quality influences reputation through both satisfaction-mediated and direct pathways.

Non-academic service quality demonstrated marginally significant direct effect on reputation independent of satisfaction ( $\beta = 0.15, SE = 0.08, p = 0.057, 95\% CI: -0.01 - 0.31$ ), suggesting that non-academic quality primarily influences reputation through satisfaction mediation rather than through direct pathways.

**4.4 Mediation Analysis:**

**SQ Effects on Reputation**

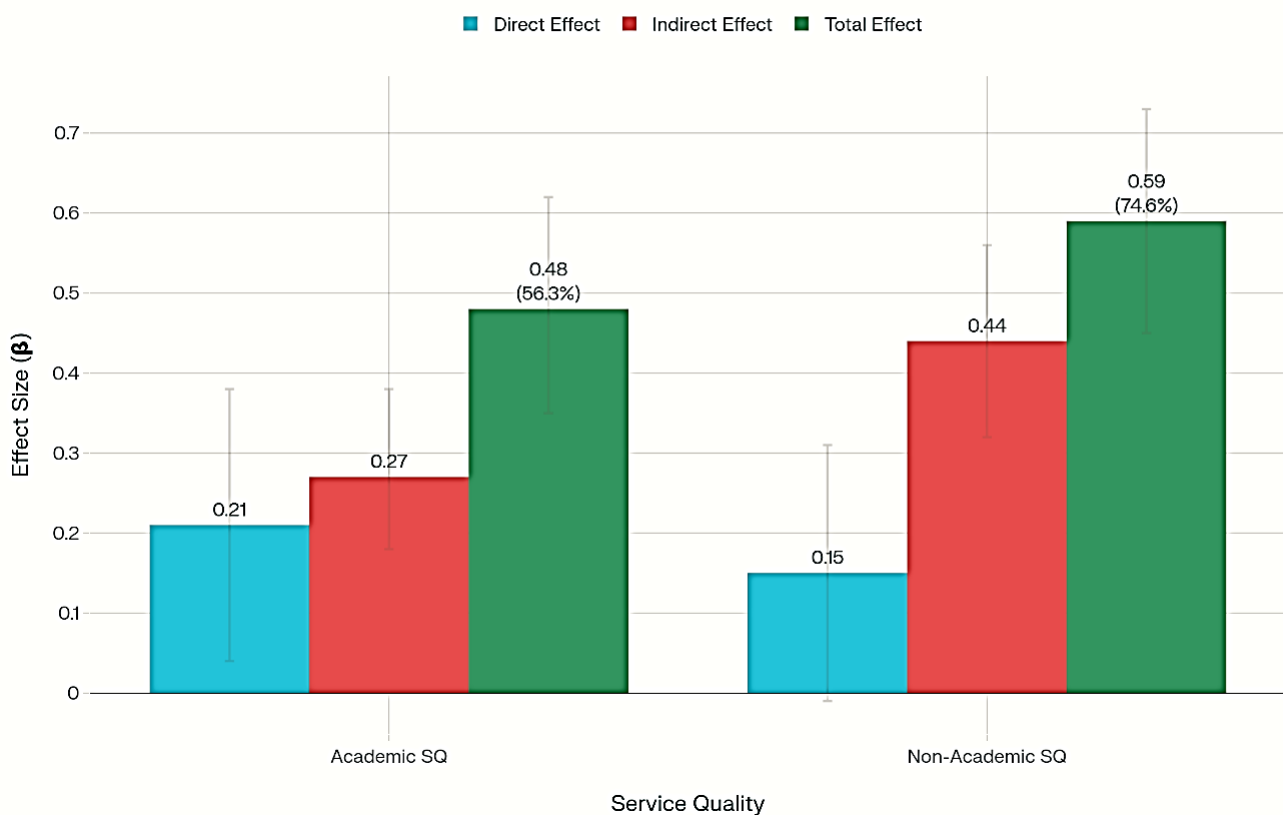


Figure 2: Direct, Indirect, and Total Effects with Bootstrap Confidence Intervals

Academic service quality exerted total effect of 0.48 on reputation ( $p < 0.001$ ), with 56.3% operating through satisfaction mediation and 43.7% through direct pathways. Bootstrap confidence intervals (1,000 resamples, 95% CI: 0.18-0.38) confirmed statistical significance of mediated effect.

Non-academic service quality exerted larger total effect of 0.59 on reputation ( $p < 0.001$ ), with 74.6% operating through satisfaction mediation and 25.4% through direct pathways. Bootstrap confidence intervals (95% CI: 0.32-0.56) confirmed statistical significance of substantial mediated effects.

The substantially greater mediation proportion for non-academic service quality (74.6% versus 56.3%) indicates that non-academic quality effects on reputation operate primarily through satisfaction enhancement, while academic quality exerts more substantial direct reputational effects.

**4.5 Moderation Analysis Results:**

Multi-group SEM comparing Asia-Pacific students ( $n=210$ ) with students from other regions ( $n=177$ ) revealed significant structural differences ( $\Delta\chi^2=12.34, \Delta df=4, p < 0.05$ ), indicating moderation effects. Specifically:

**Academic Service Quality Effects:** Asian students assigned lower importance to academic service quality in predicting satisfaction ( $\beta_{Asia}=0.34, p < 0.01$ ) compared to non-Asian students ( $\beta_{Non-Asia}=0.52, p < 0.001$ ). This difference suggests academic quality preferences vary by cultural context.

**Non-Academic Service Quality Effects:** Asian students assigned higher importance to non-academic service quality ( $\beta_{Asia}=0.74, p < 0.001$ ) compared to non-Asian students ( $\beta_{Non-Asia}=0.62, p < 0.001$ ), indicating that international students from Asia particularly emphasize support services and campus environment in satisfaction determination.

Satisfaction-Reputation Relationships: Satisfaction effects on reputation did not differ significantly across regions ( $\Delta\chi^2=1.87$ ,  $p>0.05$ ), indicating this relationship proves culturally consistent.

Program level moderation analysis revealed that master's students ( $n=239$ ) assigned higher importance to academic quality ( $\beta=0.49$ ,  $p<0.001$ ) compared to undergraduate students ( $\beta=0.35$ ,  $p<0.05$ ), while non-academic quality effects did not differ significantly ( $\Delta\chi^2=1.92$ ,  $p>0.05$ ).

#### **4.6 Model Variance Explained:**

The structural model explained 69% of variance in student satisfaction ( $R^2=0.69$ ) through combined effects of academic and non-academic service quality. The model explained 79% of variance in institutional reputation ( $R^2=0.79$ ) through combined effects of service quality and satisfaction.

These substantial  $R^2$  values indicate that identified service quality dimensions and satisfaction comprehensively capture major factors influencing reputation in international student contexts.

### **5. Discussion:**

#### **5.1 Primary Findings:**

The research provides empirical evidence regarding structural relationships among service quality dimensions, international student satisfaction, and institutional reputation. Key findings include:

Differential Effects of Service Quality Dimensions: Non-academic service quality dimensions exert substantially stronger effects on student satisfaction ( $\beta=0.68$ ) compared to academic service quality ( $\beta=0.42$ ), representing 62% effect magnitude increase. This finding challenges prevailing assumptions that academic quality predominantly determines student satisfaction and suggests that holistic experiences encompassing support services, campus environment, and cultural integration programming prove equally or more influential than teaching quality and curriculum.

Satisfaction Mediation: Student satisfaction substantially mediates effects of service quality on reputation. Notably, non-academic service quality effects operate primarily through satisfaction mediation (74.6% mediated), while academic service quality effects utilize both mediated and direct pathways (56.3% mediated). This pattern suggests that academic quality influences reputation through both satisfaction-dependent and satisfaction-independent mechanisms, possibly reflecting direct institutional prestige effects from academic excellence.

Geographic Moderation: Relationships between service quality and satisfaction demonstrate significant geographic variation, with international students from Asia-Pacific region assigning higher importance to non-academic service quality ( $\beta=0.74$  versus 0.62 for non-Asian students). This variation suggests that Asian source market dynamics—potentially reflecting greater cultural distance, language barriers, and emphasis on practical support—make non-academic services particularly influential in satisfaction determination.

Substantial Reputation Variance Explained: The model explains 79% of reputation variance through service quality and satisfaction, indicating that identified service dimensions comprehensively capture major reputation determinants among international students. This finding suggests relatively limited role of exogenous factors such as institutional rankings or prestige in influencing international student reputation perceptions.

#### **5.2 Theoretical Implications:**

Service Quality Multidimensionality: The research advances service quality theory by simultaneously examining multiple quality dimensions and quantifying their differential effects. While prior literature acknowledged multiple quality dimensions, few studies empirically compared effect magnitudes across dimensions. The finding that non-academic dimensions exert stronger satisfaction effects challenges hierarchical service quality models assuming academic quality as primary determinant.

Mediation Mechanisms: The research contributes to understanding of mediation mechanisms linking organizational service delivery to reputation outcomes. The identification of differential mediation proportions across service quality dimensions suggests that different pathways to reputation exist depending on service quality type. This insight enriches reputation theory by demonstrating that not all organizational actions influence reputation through identical mechanisms.

Cultural Contingency: The identification of geographic moderation effects extends service quality theory by demonstrating cultural contingency in quality-satisfaction relationships. The stronger non-academic quality effects among Asian students may reflect cultural factors including greater emphasis on collective welfare, practical assistance prioritization, or heightened salience of environmental factors in satisfaction determination. This finding contributes to cross-cultural higher education research by empirically demonstrating systematic variation in satisfaction determinants across cultural contexts.

#### **5.3 Practical Implications:**

Resource Allocation Priority: The research provides quantitative evidence supporting institutional prioritization of non-academic service investments. Given that non-academic service quality exerts substantially stronger direct effects on satisfaction and 74.6% of effects on reputation operate through satisfaction mediation, institutions seeking to enhance reputation through satisfaction improvement should prioritize non-academic service quality investments.

Differentiated Geographic Strategies: The identification of geographic moderation effects suggests that uniform global marketing and service strategies prove suboptimal. Rather, institutions should develop differentiated strategies reflecting source market characteristics. Institutions targeting Asian students particularly should emphasize non-academic support services, cultural integration programming, and campus environment quality in marketing positioning and service delivery.

Integrated Service Strategy: The research suggests that satisfaction determination results from integrated experiences across academic and non-academic dimensions rather than single dominant factor. Consequently, institutions should develop integrated quality improvement strategies addressing both dimensions simultaneously rather than exclusively emphasizing academic excellence.

Reputation as Strategic Outcome: The strong satisfaction-reputation relationship ( $\beta=0.64$ ) and high reputation variance explained ( $R^2=0.79$ ) suggest that institutional service quality improvements translate meaningfully to reputation enhancement. This finding validates investment in service quality as reputationally strategic activity rather than merely operationally necessary.

#### **5.4 Limitations:**

This research provides empirical insights regarding service quality relationships to satisfaction and reputation but acknowledges several limitations warranting acknowledgment. First, the cross-sectional design precludes definitive causal inference, limiting ability to rule out alternative explanations for observed relationships. Longitudinal research would strengthen causal confidence.

Second, the research examines reported satisfaction and reputation perceptions rather than behavioral outcomes such as word-of-mouth communication, recommendation likelihood, or actual enrolment referrals. While satisfaction demonstrates substantial association with these behavioral outcomes in literature, direct measurement would enhance external validity.

Third, the research examines international students from particular institutional contexts within International Student Barometer network, potentially introducing selection bias. Generalization to international students in non-participating institutions or domestic student populations requires caution.

Fourth, the measurement instruments, while validated, represent single self-reported assessments subject to common method bias and social desirability influences. Multi-method measurement including institutional records or peer evaluations would enhance validity.

Fifth, the research measures service quality through student perceptions rather than objective quality indicators. While perceptions represent appropriate satisfaction determinants, inclusion of objective quality metrics would enable comparison between perceived and objective quality.

Finally, the research examines a limited set of potentially influential variables, with 31% of reputation variance unexplained. Inclusion of additional variables such as institutional prestige, rankings, research output, or employment outcomes might enhance model comprehensiveness.

#### **5.5 Future Research Directions:**

Several research directions would advance understanding of service quality, satisfaction, and reputation relationships in international higher education contexts. Longitudinal research tracking students through enrolment periods would enable examination of satisfaction evolution and its dynamic effects on reputation formation. Experimental designs manipulating service quality through controlled interventions would strengthen causal inference.

Research examining behavioral outcomes including word-of-mouth communication, recommendation likelihood, and actual referral generation would extend understanding beyond perceptual outcomes to actual reputational consequences. Qualitative research exploring mechanisms through which service quality influences satisfaction would enhance understanding of causal pathways.

Comparative research examining differences between domestic and international student populations would clarify whether identified relationships prove universal or specific to international contexts. Research examining institutional context effects, such as variation across institution types or geographic locations, would enhance understanding of contextual contingency. Finally, research examining service quality improvement initiatives and their effects on satisfaction and reputation would provide practical evidence regarding intervention effectiveness, enabling development of best-practice recommendations for institutional improvement.

#### **6. Conclusion:**

This research provides empirical evidence regarding structural relationships among higher education service quality dimensions, international student satisfaction, and institutional reputation. Through structural equation modelling of data from 387 international students across 28 institutions, the study advances understanding of satisfaction and reputation determinants while providing evidence-based guidance for institutional strategy and resource allocation.

Primary findings indicate that non-academic service quality dimensions exert substantially stronger effects on international student satisfaction compared to academic dimensions, challenging prevailing assumptions regarding satisfaction determinants. Student satisfaction substantially mediates effects of service quality on reputation, with particularly strong mediation for non-academic service quality. Geographic moderation effects demonstrate that satisfaction determinants vary across international source markets, suggesting the necessity for culturally informed institutional strategies.

These findings carry substantial implications for institutional practice. Institutions seeking to enhance reputation and competitive advantage through satisfaction improvement should prioritize non-academic service quality investments including student support services, campus environment enhancement, cultural integration programming, and accommodation quality. Simultaneously, institutions should maintain academic quality excellence while recognizing that academic quality operates through both satisfaction-mediated and direct pathways to reputation.

The research demonstrates that international student satisfaction and institutional reputation represent achievable institutional outcomes substantially determined by controllable service quality factors. By strategically investing in comprehensively excellent academic and non-academic service quality, institutions can meaningfully enhance international student satisfaction and institutional reputation, translating to competitive advantages in intensifying global markets.

As international higher education competition continues to intensify, competitive differentiation increasingly depends on institutional ability to deliver superior integrated service experiences exceeding prospective student expectations. This research provides empirical validation of this principle while identifying priority investment areas enabling institutions to maximize reputational returns from service quality investments.

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