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Assuring quality of teaching and learning in post-conflict higher education: The Case of Somalia

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ABSTRACT

This study examines the factors that contribute to ensuring the quality of teaching and learning in post-conflict higher education in Somalia (1991–present). It examines how the quality of the curriculum, academic staff, and infrastructure impact the quality of teaching and learning. A quantitative research approach was adopted, utilizing a structured questionnaire administered to the academic staff at higher education institutions in Mogadishu. The data were analyzed using the SmartPLS software. This is the first study to integrate Biggs' 3 P and Resource-Based View frameworks, and empirically quantify these relationships in a Somali post-conflict context. The findings indicated that all three factors had positive and significant impacts on teaching and learning quality, with infrastructure having the most substantial effect. This study recommends strategic investment in infrastructure, dynamic curriculum development, and faculty training. These insights provide valuable guidance for policymakers and academic leaders seeking to rebuild a resilient higher education system.

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Introduction

Higher education plays a crucial role in rebuilding societies that have emerged from conflicts. In post-conflict settings, educational institutions face numerous challenges, including restoring infrastructure, rebuilding academic staff capacity, and developing relevant curricula (Milton, 2022). Long-lasting conflict in Somalia has a detrimental impact on a country's higher education system (Milton & Barakat, 2016). A significant disruption in higher education provision resulted from the fight, forcing once-prestigious Somali National University to close its doors. The industry experienced even more difficulties when educational infrastructure, including buildings and resources, was destroyed.

First, universities are essential catalysts for human capital growth, significantly influencing the future evolution of post-conflict societies (Milton & Barakat, 2016; Nur et al., 2013). Universities support the nation's rehabilitation and sustainable development by providing students with the knowledge and skills necessary for growth (Rieckmann et al. 2018).

The post-conflict environment in Somalia presents particular challenges that necessitate specialized methods of instruction and learning. In this environment, it is imperative to consider integrating indigenous knowledge systems, attending to the emotional needs of students impacted by violence, and fostering entrepreneurship (Zembylas, 2017). There is a need to offer insights that can guide practice and policy by examining the approaches and difficulties faced by higher education institutions in a post-conflict context (Ainebyona, 2016). Hence, this study closes gaps in the literature and lays the groundwork for further research and action by illuminating the problems encountered by Somali educational institutions (Jama et al., 2024).

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Somalia's higher education system faces significant challenges in its path to recovery after years of conflict. Both public and private universities struggle with inadequate infrastructure, as evidenced by the shortage of classrooms, libraries, and laboratories (Idris et al., 2025). Additionally, the conflict has led to a shortage of qualified teachers, as academics have left the country and professional development opportunities have dwindled (Habib, 2023; Milton & Barakat, 2016). Moreover, existing curricula do not adequately address peacebuilding, trauma-informed pedagogy, and sustainable development, leaving graduates unprepared for reconstruction efforts (Idris et al., 2025). As a result, learning environments remain fragile and graduates struggle to make meaningful contributions to society.

Although previous studies have described these deficits (Ainebyona, 2016; Milton, 2022), few have empirically tested how specific institutional inputs influence teaching and learning quality. By surveying 313 faculty members in Mogadishu and applying SmartPLS, this study rigorously examined an integrated Biggs' 3 P and resource-based framework to determine which presage factors—curriculum structure, academic staff capacity, and infrastructure—strongly predict learning outcomes.

Literature review

Curriculum structure and learning outcomes

Somalia's higher education system faces significant challenges in its path to recovery after years of conflict. Both public and private universities have struggled with curriculum programs that do not adequately address the realities of post-conflict contexts. Current offerings often lack content on peacebuilding, trauma-informed pedagogy, and sustainable development, leaving graduates ill-equipped for national reconstruction. In this environment, a coherent, context-responsive curriculum is fundamental for effective teaching and learning (Zembylas, 2017).

Biggs's (1993) 3 P model labels curriculum structure as a 'presage factor', an institutional input that shapes how teaching and learning processes unfold. Under the Resource-Based View (RBV), Curriculum Structure functions as an organizational capability with VRIO characteristics (Barney, 1991). A well-designed curriculum, aligned with local needs and integrated with indigenous knowledge systems, is a valuable and difficult-to-imitate resource that guides faculty and students toward desired outcomes (Patnaik et al., 2022; Sinnema & Stoll, 2020).

Empirical studies reinforce this relationship. Milton (2022) found that universities implementing constructively aligned curricula reported higher student engagement and performance. Kusmawan et al. (2025) demonstrated that community-based, collaborative curriculum elements foster social cohesion, which is a crucial outcome in societies recovering from conflict. (Nur et al., 2013) highlighted that students exhibit greater academic resilience when the curriculum integrates psychosocial support elements.

Together, these findings suggest that when treated as an organizational capability, a coherent, dynamic curriculum presage significantly enhances the Quality of Teaching and Learning (H1). Thus, the curriculum structure is both a presage input in Biggs' 3 P model and a strategic resource under the RBV, warranting the following hypothesis:

Academic staff: building human capital

Years of conflict in Somalia have led to a severe shortage of qualified teachers, as academics have left the country and professional development opportunities have dwindled (Habib, 2023; Milton, 2022). This shortage compromises the quality of the education offered by public and private institutions.

A robust body of literature links teacher qualifications, ongoing professional development, and retention strategies to improving educational outcomes (Hussein, 2015). For example, Jazaieri (2018) observed that higher percentages of faculty members with postgraduate credentials correlated strongly with better student performance. Aithal and Aithal (2020) demonstrated that targeted in-service training enhanced pedagogical skills and strengthened the human capital base.

According to the Human Capital Theory (Blaug, 1976; Schultz, 1961), investment in Academic Staff is treated as building human capital—skills, expertise, and teaching experience that faculty bring to the classroom. Within the RBV framework, qualified academic staff represents human capital that is valuable,

rare, and difficult to imitate, making it a strategic resource for the institution (Murphy, 2000). Moreover, in Biggs' 3 P model, academic staff competency is another key factor; skilled instructors facilitate more effective learning processes, thereby improving educational outcomes.

Taken together, these studies and theoretical perspectives underscore our hypothesis that stronger Academic Staff capacity, grounded in Human Capital Theory and RBV, will positively impact the Quality of Teaching and Learning (H2).

Infrastructure in post-conflict higher education

Years of conflict often leave universities with damaged buildings, limited ICT, and scarce laboratories, severely hindering hands-on learning and research (Milton, 2022; Odesanmi et al., 2020). Under-resourced libraries and laboratories in Somalia have stymied innovation and independent studies (Ainebyona, 2016).

Within the Post-Conflict Reconstruction Framework, rebuilding physical assets, such as classrooms, laboratories, and ICT facilities, is not merely a logistical necessity but also a cornerstone of broader societal stabilization (Barakat & Urdal, 2009; Stewart et al., 2018). By restoring safe and functional learning environments, universities help reestablish psychological security for students and faculty, enabling them to engage more fully in the teaching and learning process.

From an RBV standpoint, infrastructure is a tangible resource that must be valuable, rare, and difficult to imitate to generate sustained performance (Habib, 2023). Functional laboratories, well-equipped workshops, and accessible e-resources are correlated with higher student achievement, particularly in STEM fields (Naser, 2010; Odesanmi et al., 2020). Secure, modern infrastructure thus represents a presage factor under Biggs' 3 P model, providing the necessary conditions for effective teaching processes.

Accordingly, these theoretical and empirical considerations justify our hypothesis that improved infrastructure—viewed as a tangible, VRIO resource and a critical presage condition under the Post-Conflict Reconstruction Framework—will positively influence the Quality of Teaching and Learning (H3).

Theoretical discussion

To synthesize this literature, we anchor our model in two complementary frameworks: the Biggs' 3 P Model (Presage–Process–Product) and the Resource-Based View (RBV)augmented by Human Capital Theory (HCT) and insights from Post-Conflict Reconstruction. Biggs's 3 P model posits that presage factors (institutional inputs such as curriculum design, faculty characteristics, and physical environment) shape the teaching and learning process, which in turn produces Learning Outcomes (products) (Feuer et al., 2013). In post-conflict Somali HEIs, these presage factors are particularly fragile and require targeted rebuilding. The resource-based view (RBV) frames Curriculum Structure, Academic Staff, and Infrastructure as strategic resources. Under RBV, a resource must be 'valuable, rare, inimitable, and organised' (VRIO) to yield a sustained competitive advantage (Cardeal, 2012). The curriculum structure is conceptualized as an organizational capability that guides knowledge sequencing and delivery. Academic staff represent human capital—the skills, expertise, and teaching experience held by faculty (Blaug, 1976; Schultz, 1961). Infrastructure is treated as a tangible resource and the physical and technological assets that enable effective pedagogy, especially in fragile settings (Barakat & Urdal, 2009). Human Capital Theory (HCT) further underlines that investment in faculty (recruitment, training, and retention) enhances individual and institutional learning capacity. Academics with advanced training and pedagogical skills can directly transfer their expertise to students and strengthen their learning outcomes. The Post-Conflict Reconstruction Framework emphasizes that infrastructure rehabilitation is not just an educational concern but a foundational component of broader societal recovery. Safe, functional classrooms and laboratories restore psychological security, enabling instructors and students to focus on learning.

By integrating these perspectives, we argue that:

1. Curriculum Structure (organizational capability/HCT) is a presage resource that enhances QTL (H1).
2. Academic staff (human capital) functions as a strategic and inimitable resource for boosting QTL (H2).

3. Infrastructure (a tangible asset) is a critical prerequisite condition in post-conflict reconstruction that directly influences QTL (H3).

Hypothesis

Guided by the 3 P Model and the Resource-Based View, the following hypotheses are proposed:

1. **H1**: Curriculum Structure positively impacts the Quality of Teaching and Learning in Post-conflict Higher Education.
2. (As a presage factor in the 3P model and an organizational capability in RBV, curriculum structure shapes the learning environment and content relevance.)
3. **H2**: Academic Staff positively impacts the Quality of Teaching and Learning in Post-conflict Higher Education.
4. (Qualified academic staff represent human capital that enhances teaching effectiveness and aligns with pedagogical and RBV perspectives.)
5. **H3**: Infrastructure has a positive impact on the Quality of Teaching and Learning in post-conflict higher education.
6. (As a foundational presage element and a tangible resource, infrastructure supports instructional delivery and student engagement.)

Figure 1 positions curriculum structure, academic staff, and infrastructure as presage factors in the 3 P model. These factors influence teaching and learning process and ultimately determine the quality of teaching and learning (product). Simultaneously, these elements are conceptualized as strategic resources under the RBV, representing organizational capabilities, human capital, and tangible infrastructure. The framework is tailored to assess quality factors in post-conflict higher education settings such as Somalia.

Methodology

Research design

This study used a quantitative, cross-sectional survey design, which is suitable for statistically testing the relationships between Curriculum Structure, Academic Staff, Infrastructure, and Quality of Teaching and Learning in post-conflict higher education (Spector, 2019; Wang & Cheng, 2020). While qualitative or mixed-methods approaches can provide contextual depth (e.g. in-depth faculty interviews or focus groups), our primary aim is to quantify the effect sizes of specific institutional inputs using SmartPLS.

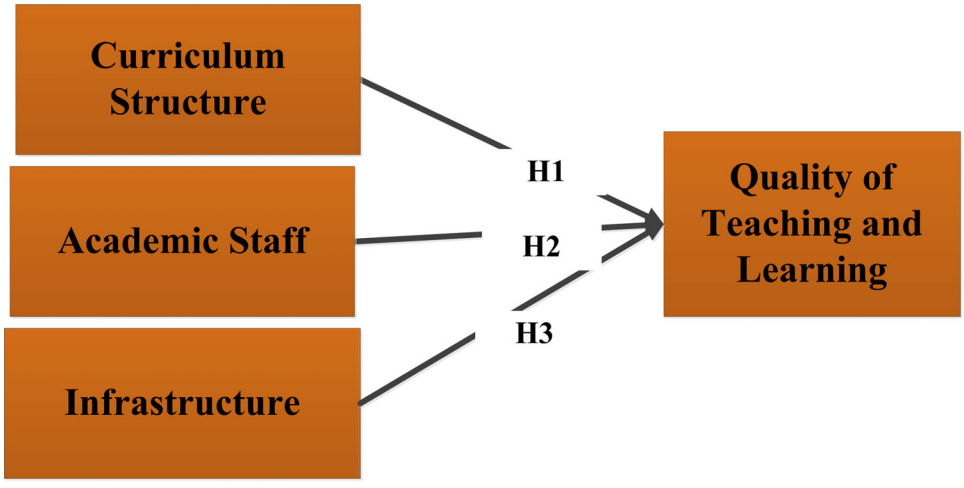

Figure 1. Conceptual framework integrating Biggs' 3 P Model and Resource-Based View (RBV).

Future research should adopt a mixed-method design to complement this analysis with qualitative insights into the experiences of faculty and students.

Participants of the sample and sampling technique

This study employed a purposive sampling approach to select academic staff from higher education institutions in Mogadishu, Somalia (Habib, 2023; Milton & Barakat, 2016). Purposive sampling is a non-probability technique in which participants are chosen based on predetermined inclusion criteria relevant to the research objectives. In this context, we targeted faculty members with direct experience in teaching, curriculum development, or infrastructure use in post-conflict higher education settings.

Participants were identified through institutional directories obtained from public and private universities in Mogadishu as well as via official lists provided by the Somali Ministry of Education. Initial contact was made via formal email followed by follow-up phone calls. A screening checklist ensured that each respondent had at least one year of teaching or administrative experience in a Somali HEI post-2000. This criterion was established to ensure that participants had firsthand knowledge of the challenges and changes in the curriculum, staffing, and infrastructure following Somalia's prolonged conflict.

To mitigate potential selection bias, we stratified the sample across four major institutions (two public and two private) and faculties (the Arts & Humanities, Science & Technology, Business & Social Sciences). In total, 313 participants completed the survey. The sample size was determined based on statistical power calculations using SmartPLS (Anderson et al., 2017). Given the small-to-moderate population of faculty in Mogadishu, 313 responses provided adequate power ($\geq$ 0.80) to detect medium-to-large effect sizes.

Instrumentation

A structured questionnaire was used as the principal data-collection tool. The instrument was divided into four sections.

1. Curriculum Structure (CS): Five items adapted from validated measures of constructive alignment and context sensitivity
2. Academic Staff (AS): Five items based on Human Capital Theory measuring faculty qualifications, training, and teaching effectiveness.
3. Infrastructure (IN): Five items reflecting physical resources, ICT availability, and learning facilities.
4. Quality of Teaching and Learning (QTL): Five items capturing student engagement, instructional quality, and learning outcomes.

All items were rated on a five-point Likert scale ranging from 1 ('Strongly Disagree') to 5 ('Strongly Agree').

The questionnaire was adapted—not copied verbatim—from instruments used in prior research on post-conflict higher education and quality assurance (Idris et al., 2025; Milton & Barakat, 2016). Terminology was modified to reflect the Somali context (e.g. specifying 'campus generators' or 'internet outages' in infrastructure items).

To ensure content validity, a panel of three experts reviewed the draft instrument: a professor specializing in higher-education quality assurance, a senior official from the Ministry of Education, and a faculty member experienced in post-conflict curriculum design.

Their feedback led to minor revisions in terms of clarity, relevance, and cultural sensitivity (e.g. clarifying 'curriculum alignment' as 'locally relevant syllabi' locally relevant syllabi').

A pilot test was conducted with 15 faculty members (five from each of the four targeted institutions) who did not participate in the primary survey. The pilot session assessed item clarity and response consistency. Based on quantitative analysis (Cronbach's alpha) and qualitative feedback, two items were reworded (simplifying phrasing, removing ambiguous jargon), and one redundant item (duplicate measure of 'lab availability') was deleted. The final instrument contained 18 items (excluding the demographic questions).

Consent to participate

This study strictly adhered to ethical standards in human research. Before data collection, each participant received an information sheet explaining the study objectives, potential risks and benefits, and statements regarding confidentiality and anonymity. Participants were informed that their involvement was voluntary and that they could withdraw without penalty or consequence. Written informed consent was obtained from all respondents.

No personally identifiable information (e.g. names and employee IDs) was collected to protect privacy. The completed questionnaires were coded numerically and stored on a password-protected computer that was accessible only to the principal investigator.

Data analysis

This study employed SEM, specifically SmartPLS, to analyze the complexity of the data, as PLS techniques are well-suited for handling complex relationships (Hair et al., 2014). Smart PLS 4.0 and SPSS version 26 were used for the analysis. During the analysis, scanning electron microscopy (SEM) techniques were applied to the measurement and structural models. The assessment involved evaluating the constructs' convergent validity, discriminant validity, and reliability in order to measure the model. Following Fornell and Larcker (1981) criteria, convergent validity was evaluated using Average Variance Extracted (AVE), indicator factor loadings, and composite reliability (CR) to assess the model. The accepted thresholds for these indicators were AVE $>$ 0.50, CR $>$ 0.70, and indicator loading $>$ 0.70. (Hair Jr et al., 2017). Discriminant validity (HTMT $<$ 0.85) (Cheung et al., 2023; Rönkkö & Cho, 2022).

Structural model evaluation: Hypothesized relationships (H1–H3) were tested using bootstrapping with 10,000 subsamples to obtain the path coefficients (β), *t*-values, and p-values (Hair et al., 2014).

Results

The SmartPLS statistical software package has significantly advanced research methodologies, particularly in postconflict Somali higher education. These tools offer robust capabilities for analyzing complex data, enabling researchers to effectively construct and evaluate structural equation models. SmartPLS provides a user-friendly interface for model specification and estimation, which is crucial for examining the multifaceted factors that influence the quality of teaching and learning (Sakaria et al., 2023). The flexibility of the package in the model specification, combined with its comprehensive approach to estimation, makes it a valuable asset for researchers seeking deeper insight into educational outcomes and processes. By leveraging these tools, studies can contribute significantly to the understanding and improvement of academic quality in challenging environments.

Measurement model evaluation

Meticulous evaluation of measurement models in structural equation Modelling (SEM) is crucial, especially in post-conflict higher education systems, where research instruments must be validated with precision. The study highlighted 'Assuring Quality of Teaching and Learning in Post-conflict Higher Education: The Case of Somalia' as a prime example of such rigorous assessment. This emphasizes the importance of establishing reliability and validity through various statistical measures. Outer loadings, composite reliability, and Average Variance Extracted (AVE) were used to assess convergent validity. The research underscores that factor loadings, composite reliability values exceeding 0.7, and AVE values above 0.5 indicate strong convergent validity. Information regarding the convergent validity is presented in Table 1 and Figure 2. These thresholds ensure that the constructs within the study are measured consistently and accurately, reflecting the true nature of the variables that they intend to represent. This study's adherence to these optimal values strengthens its internal consistency and reinforces the credibility of its findings in the complex environment that it addresses.

Discriminant validity is crucial for ensuring that distinct constructs do not overlap inappropriately (Rönkkö and Cho, 2022). The Fornell-Larcker criterion and the heterotrait-monotrait (HTMT) ratio are

Table 1. Factor loadings, reliability, and convergent validity.

Variable	Items	Loadings	Alpha	CR	AVE
Curriculum structure	CS1	0.823	0.850	0.892	0.625
	CS2	0.812			
	CS3	0.794			
	CS4	0.800			
	CS5	0.718			
Academic staff	AS1	0.759	0.775	0.847	0.527
	AS2	0.718			
	AS3	0.708			
	AS4	0.793			
	AS5	0.644			
Infrastructure	IN1	0.726	0.777	0.842	0.518
	IN2	0.661			
	IN3	0.749			
	IN4	0.766			
	IN5	0.689			
Quality of teaching and learning	QTL1	0.742	0.836	0.885	0.606
	QTL2	0.735			
	QTL3	0.864			
	QTL4	0.734			
	QTL5	0.809			

SC Curriculum Structure, AS = Academic Staff, IN = Infrastructure, and QTL Quality of Teaching and Learning.

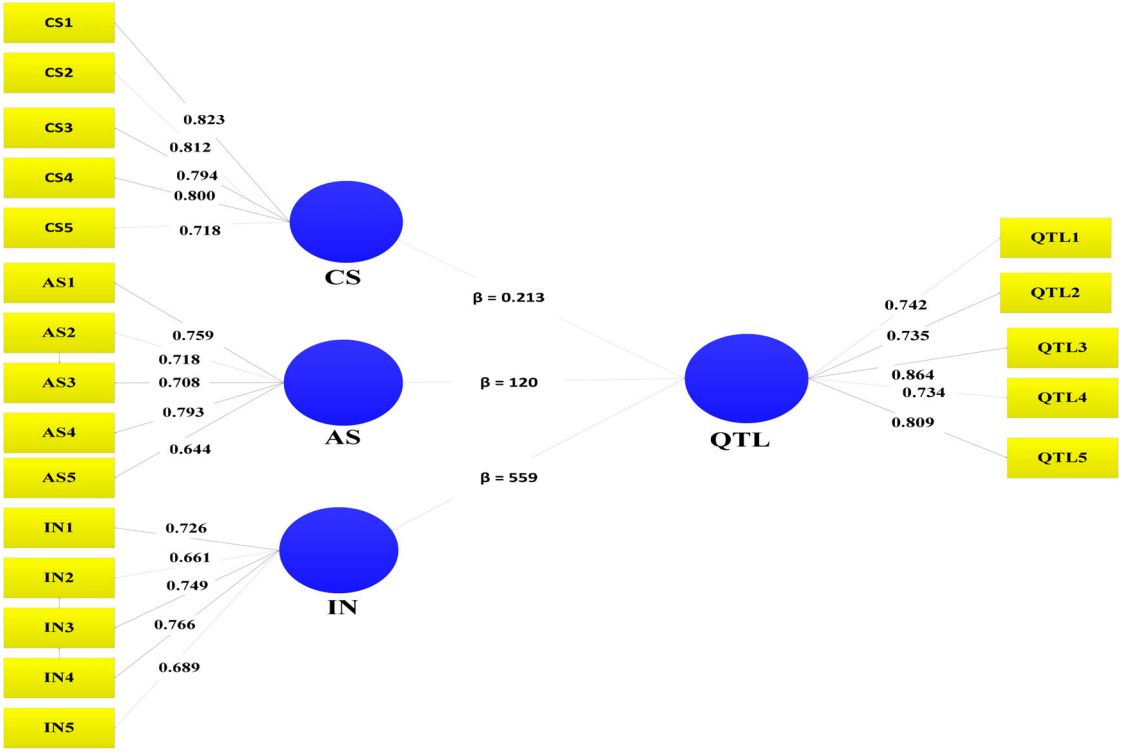

Figure 2. Measurement model.

established methods for assessing this validity. In the context of educational quality, these measures help confirm that various related constructs capture unique aspects without a significant overlap. Adherence to the Fornell-Larcker criterion, where the square root of the Average Variance Extracted (AVE) exceeds the inter-construct correlations and the HTMT ratio is below the threshold of 0.85, is a strong indicator of discriminant validity. These criteria, along with the significant loadings of items on their respective constructs, provide a robust framework for evaluating the distinctiveness of the constructs. Path analysis further solidifies the study's findings by highlighting the influence of these constructs, particularly infrastructure, on quality of education. Such rigorous validation processes underscore the methodological soundness of the research and contribute to a deeper understanding of the factors that affect educational outcomes and constitute quality academic experience in challenging settings, thereby reassuring the audience regarding the research methodology, as shown in Table 2. Third, the

Table 2. Discriminant validity (Fornell-Larcker criterion).

	CS	As	INL	QT
CS	0.790			
AS	0.723	0.726		
INL	0.325	0.340	0.719	
QTL	0.482	0.465	0.669	0.779

Table 3. Heterotrait monotrait ratio (HTMT).

	CS	As	INL	QTL
CS				
AS	0.845			
INL	0.343	0.383		
QTL	0.559	0.567	0.760	

Table 4. Results of hypothesis analysis.

Hypothesis	Effects	Beta	*T* values	*p* values	Study results
H1	CS -> QTL	0.213	3.433	0.007	Supported
H2	AS -> QTL	0.120	1.874	0.023	Supported
H3	INL -> QTL	0.559	12.242	0.000	Supported

HTMT values must be less than 0.85 for discriminant validity. Discriminant validity was confirmed, as shown in Table 3, indicating that this condition was satisfied.

Structural model

A structural model in education examines the relationships between variables such as curriculum, academic staff, and infrastructure to understand their impact on student learning. Path analysis using SmartPLS showed that improvements in these areas positively influenced the quality of teaching and learning (QTL). The most decisive influence is from infrastructure, which is particularly important in post-conflict settings, such as Somalia. The structural model confirmed the four hypotheses with statistically significant path coefficients (p-value < 0.05), as determined through bootstrapping with 10,000 subsamples. This indicates a strong direct correlation between the independent factors (curriculum structure, academic staff, and infrastructure) and the dependent factors (quality of teaching and learning). The results of the hypothesis analysis are presented in Table 4. The table displays the effects, beta values, t-values, p-values, and study results for each hypothesis. The abbreviations used in the table are Curriculum Structure (CS), Academic Staff (AS), infrastructure (IN), and Quality of Teaching and Learning (QT).

Hypothesis 1 (CS → QTL): The effect size (beta) is 0.213, indicating a positive impact of the Curriculum Structure on the Quality of Teaching and Learning. The t-value was 3.433 and the p-value was 0.007. These values support the hypothesis, indicating that Curriculum Structure significantly affects the Quality of Teaching and Learning in post-conflict higher education.

Hypothesis 2 (AS -> QTL): The effect size (beta) is 0.120, indicating a positive impact of Academic Staff on the Quality of Teaching and Learning. The t-value was 1.874 and the p-value was 0.023. These values suggest that the hypothesis is supported, indicating that Academic Staff significantly impact the Quality of Teaching and Learning in post-conflict higher education.

Hypothesis 3 (IN > QTL): The effect size (beta) is 0.559, indicating a positive impact of infrastructure on the Quality of Teaching and Learning. The t-value was 12.242 and the p-value was 0.000. These values support the hypothesis that infrastructure has a significant impact on the Quality of Teaching and Learning in post-conflict higher education.

Recall our research question: How do Curriculum Structure, Academic Staff, and Infrastructure influence the Quality of Teaching and Learning in post-conflict Somali higher education? Table 4 and Figure 3 directly address this by showing that all three presage factors significantly predicted QTL, with infrastructure exerting the most significant effect ($\beta = 0.559$, $t = 12.242$, $p < 0.001$).

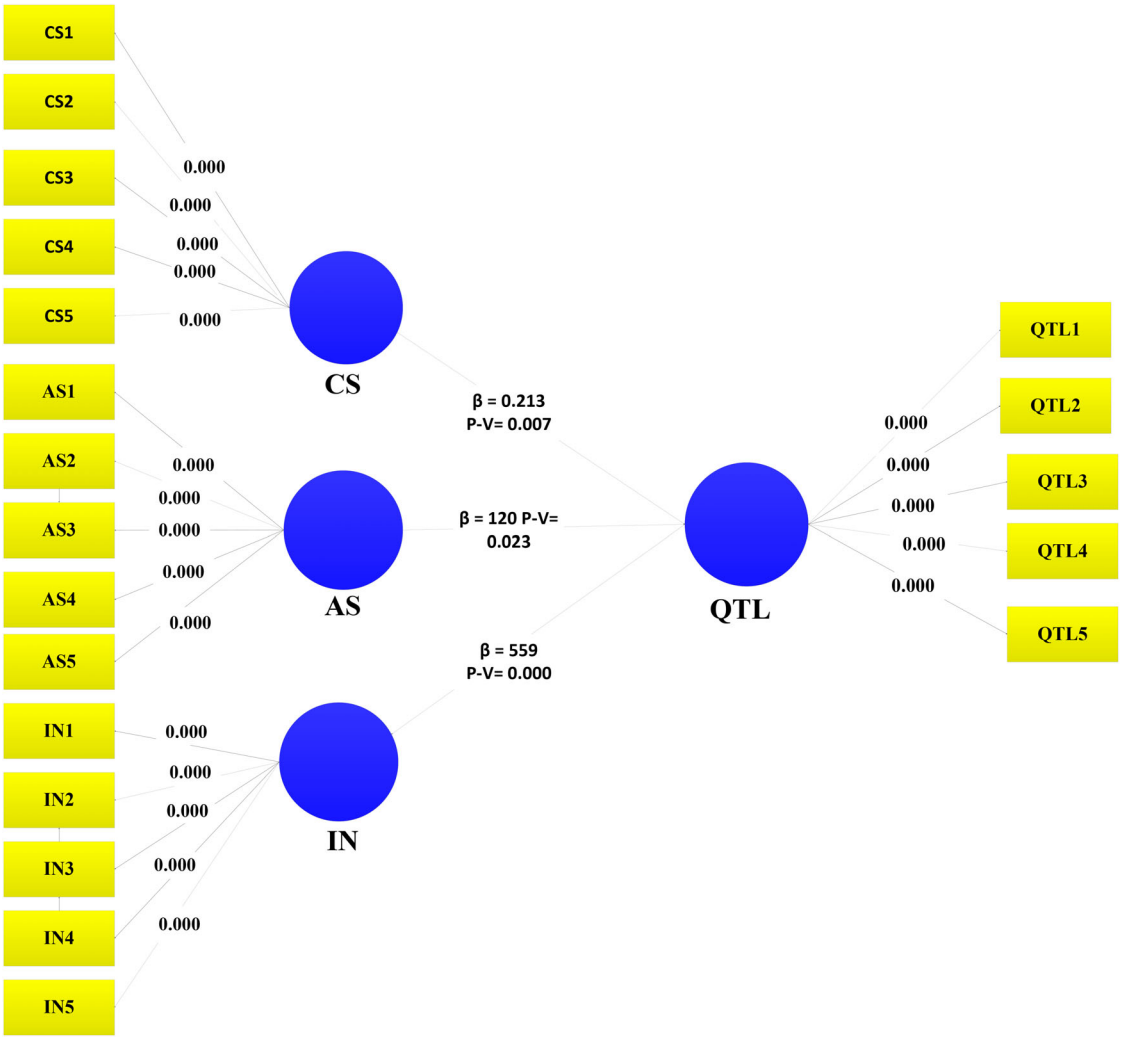

Figure 3. Structural model.

Discussion

These findings underscore the intricate interplay between Curriculum Structure, Academic Staff, and Infrastructure in enhancing the Quality of Teaching and Learning (QTL) in Somali higher education institutions. Framed by Biggs' 3 P model, these three variables function as 'presage' factors—inputs that shape the teaching-learning process—while the Resource-Based View (RBV) interprets them as strategic resources (organizational capability, human capital, and tangible assets).

The positive correlations suggest that a holistic approach that simultaneously addresses multiple facets could be instrumental in elevating educational standards. In support of H3, Infrastructure is the strongest predictor ($\beta = 0.559$, $t = 12.242$, $p < 0.001$). This finding aligns perfectly with RBV logic; in a post-conflict setting where physical facilities and technology are scarce and difficult to replace, robust infrastructure becomes a highly valuable, rare, and inimitable resource. Under Biggs' 3 P lens, infrastructure quality constitutes an essential presage condition that enables effective teaching processes, thereby improving QTL. The pronounced impact of infrastructure on QTL is particularly noteworthy in the post-conflict Somali context, where the audience's work in restoring educational facilities is a critical step toward normalcy and progress (Hay, 2017). This aligns with the broader discourse on post-conflict educational reconstruction, which posits that a stable physical learning environment is fundamental for academic success.

Moreover, the positive and significant effect of Curriculum Structure ($\beta = 0.213$, $t = 3.433$, $p = 0.007$) on QTL confirms H1 and resonates with Biggs' emphasis on constructive alignment and coherent

program design. In the RBV framework, a well-structured curriculum is an organizational capability that guides the use of resources, such as faculty time, learning materials, and pedagogical strategies, toward desired learning outcomes. Similarly, H2 found that Academic Staff competence ($\beta = 0.120$, $t = 1.874$, $p = 0.023$) positively influences QTL, which supports both the 3 P model (skilled instructors facilitate more effective learning processes) and RBV (qualified staff represent human capital that bolsters institutional performance). The significance of curriculum structure and academic staff cannot be overstated (van den Hende & Riezebos, 2023). A well-structured curriculum is pivotal in providing a coherent and comprehensive educational experience. Simultaneously, the role of academic staff extends beyond mere knowledge dissemination to shaping students' intellectual and professional development (Milton, 2022). These elements, in conjunction with robust infrastructure, create a synergistic effect that propels quality of education.

Together, these three presage factors accounted for a substantial portion of the variance in the QTL, illustrating a synergistic effect. When infrastructure, curriculum, and faculty resources are aligned (3 P), they function as VRIO assets (RBV), creating a learning environment that is conducive to high-quality teaching and learning.

This study contributes to the literature by highlighting the unique challenges and requirements of post-conflict educational environments. By situating these results within dual theoretical frameworks, this study extends the existing literature in three ways: (1) It empirically validates Biggs' 3 P model in a fragile, post-conflict context, showing that presage conditions remain central to learning outcomes even when systems are under strain. (2) It applies the RBV to higher education recovery post-conflict, demonstrating that specific resources (particularly infrastructure) are pivotal in settings characterized by scarcity. (3) To our knowledge, this is the first study to fuse 3 P and RBV empirically using SmartPLS to quantify how institutional inputs influence teaching quality in Somali universities. It also offers valuable insights for policymakers and academic leaders in Somalia and other similar contexts, emphasizing the need for integrated strategies encompassing the curriculum, faculty, and facilities (Idris et al., 2025). By focusing on these critical areas, there is the potential for improved educational outcomes and fostering a resilient academic community that can withstand and thrive amidst the challenges posed by a post-conflict setting.

From a policy perspective, the pronounced effect of infrastructure (H3) implies that strategic investments in rebuilding laboratories, classrooms, libraries, and ICT facilities yield higher returns. Once the basic infrastructure is secured, simultaneous attention to curriculum alignment (H1) and staff training (H2) can create stronger learning environments. In addition, the modest but significant impact of Academic Staff competence indicates that improvements in faculty recruitment, continuing professional development, and retention strategies enhance teaching quality. These investments enhance human capital, strengthening the institution's competitive advantage, in line with the RBV perspective.

Ultimately, our integrated approach emphasizes that no single factor can be addressed in isolation. Somali universities can achieve sustainable improvements in QTL through coordinated efforts, simultaneously addressing infrastructure deficits, refining curriculum structures, and strengthening academic staff capacity.

In conclusion, this study provides empirical evidence that pre-stage factors, as conceptualized by Biggs' 3 P model, and strategic resources, as defined by the RBV, jointly drive the Quality of Teaching and Learning in post-conflict higher education. The findings serve as a clarion call for the audience to sustain their investment in educational infrastructure, curriculum development, and faculty training as the cornerstones of a robust and dynamic educational system in Somalia.

Limitation

The identified limitations are significant considerations for this research. A specific sample may not reflect the broader population, potentially affecting the study's applicability to Somalia's general higher education environment. Similarly, surveys, as data collection methods, can introduce bias and may not fully encompass the nuances of educational quality. Researchers must consider these limitations when interpreting results to ensure a balanced and accurate representation of the study's implications.

Recommendations

Enhancing Quality Teaching and Learning (QTL) in Somali higher education is pivotal to national development. Strategic infrastructure investments provide necessary resources for a conducive learning environment. Curriculum development must be dynamic, reflecting evolving market demands, and empowering students with relevant skills. Furthermore, faculty training is crucial, as it elevates teaching methodologies and fosters an academic culture that values continuous improvement and adherence to international standards.

Conclusion

The study's conclusion emphasizes the critical role of comprehensive strategies in enhancing the Quality of Teaching and Learning (QTL) in Somali higher education following conflict. This underscores the necessity of considering curriculum, faculty, and infrastructure to foster a conducive learning atmosphere. Alignment with the existing research reinforces the validity of these factors. The call for action directed at policymakers and educators underlines the collaborative efforts required to improve educational quality. Further research is encouraged to tailor these findings to the unique needs of Somalia's diverse regions and to deepen the understanding of the impact of infrastructure on education in these regions.

Disclosure statement

No potential conflict of interest was reported by the authors.

About the authors

Abukar Mukhtar Omar is the Dean of the Graduate School at SIMAD University, Mogadishu, Somalia. He holds a PhD in Education Policy, Planning and Management from Makerere University, Uganda. Dr. Omar specialises in post-conflict higher education reform, quality assurance, curriculum development, and institutional leadership. With over a decade of experience in academia and educational administration, he has led numerous initiatives aimed at strengthening academic standards and governance within Somali universities. His research integrates strategic frameworks such as Biggs' 3 P Model and the Resource-Based View (RBV) to evaluate and enhance the quality of teaching and learning in fragile contexts. Dr. Omar has published on educational resilience and development in conflict-affected societies and is an active contributor to national policy dialogues on higher education. His leadership and scholarship continue to shape efforts to rebuild and transform Somalia's education system through evidence-based practices and capacity-building strategies.

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