

Financing Constraints and Sustainable Academic Resilience: A Cross-Context Comparative Analysis

Research Paper

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Abstract: **Research purpose.** This study examines how institutional support mechanisms shape students' ability to manage financial constraints and sustain academic resilience in higher education. Using a cross-context comparative design, it evaluates whether support structures differ between Kosovo (KOS) and the Philippines (PHL) and identifies which institutional practices most effectively enhance students' capacity to cope with financial pressures.

Design / Methodology / Approach. Survey data from 363 students were analysed using a comparative statistical framework that assessed institutional flexibility, administrative and financial support, and access to digital learning resources. The analytical strategy emphasises cross-country contrasts and the joint influence of these dimensions on perceived institutional support.

Findings. Perceived support levels were low in both contexts, but clear differences emerged. Students in KOS reported greater flexibility in lecture scheduling, wider access to recorded materials, and more consistent supplementary learning programs. Students in PHL perceived more limited institutional responsiveness, which constrained their ability to navigate financial barriers and maintain academic stability. Flexible scheduling and digital resource availability were the strongest contributors to perceived support.

Originality / Value / Practical implications. The study demonstrates that institutional responsiveness, particularly administrative flexibility and digital accessibility, plays a decisive role in strengthening the academic resilience of financially constrained students. The findings offer actionable guidance for higher education institutions seeking to reduce financial stressors through targeted organisational and digital reforms.

Keywords: *Student resilience • financial constraints • institutional support • comparative analysis • higher education culturally distinct*

JEL codes: I22; I23; D14

Introduction

Financing constraints constitute a central structural challenge shaping student participation, academic continuity, and sustainability in higher education. Insufficient tuition support, unequal access to financial aid, and limited availability of learning resources continue to restrict students' capacity to engage consistently with academic demands, particularly in economically diverse systems (Oxford Analytica, 2024). Under such conditions, sustainable academic resilience, defined as students' ability to maintain academic performance and progression despite persistent financing constraints, emerges not solely as an individual attribute but as an outcome strongly conditioned by institutional support mechanisms that stabilise learning environments and mitigate economic vulnerability. Kosovo and the Philippines provide analytically relevant and contrasting contexts for examining these dynamics. Kosovo's higher-education system, shaped by post-conflict reconstruction and ongoing alignment with European standards, continues to face challenges related to public funding, digital infrastructure, and equitable access, which have disrupted academic continuity, particularly during transitions to online learning (Lulaj, 2022a). In the Philippines, persistent socio-economic inequality similarly constrains students' academic integration and persistence, as

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financial precarity and limited technological resources shape engagement across learning modalities (Clamor & Saloma, 2023). Despite distinct institutional trajectories, both systems face comparable pressures in sustaining student success under financing constraints. Universities increasingly respond to these pressures through institutional support mechanisms aimed at alleviating financial constraints and sustaining academic continuity. At the system level, effective public investment and institutional budgeting remain essential for ensuring equitable access and long-term sustainability, particularly in emerging higher-education systems such as Kosovo's (Lulaj et al., 2022). Complementary evidence further indicates that coordinated academic management and supportive digital infrastructure enhance student participation and performance across learning environments (Molina, 2022). Prior studies show that financing structures shape both academic outcomes and students' capacity for resilience. Higher state funding enhances academic excellence and financial stability (Lulaj, 2024a), while cross-country differences in financial aid and technological support lead to unequal academic performance, especially during and after COVID-19 (Lulaj et al., 2025b). This study explicitly frames sustainable academic resilience as an outcome of financing constraints interacting with institutional support across contexts (Tinto, 1993). Nevertheless, comparative evidence remains limited regarding how institutional support mechanisms operate across national contexts and learning modalities, and how they translate into sustainable academic resilience under persistent financing constraints. This study addresses these gaps by comparatively examining institutional support mechanisms in Kosovo (KOS) and the Philippines (PHL) and their role in mitigating financing constraints and fostering sustainable academic resilience during online and on-campus learning. Focusing on five institutional dimensions: schedule flexibility, communication quality, access to supplementary programs, assessment adaptability, and availability of recorded lectures, the study employs a quantitative research design, applying mean-difference tests and regression analysis to assess cross-context and cross-modality variation.

Existing literature shows that institutional support often fails to match students' expectations in resource-constrained systems, making benchmark values a descriptive reference rather than an assumed outcome (Zuhairi et al., 2020). Financial constraints further shape how support is delivered and experienced, directly affecting academic performance and resilience across contexts (Lulaj et al., 2025a; Lulaj & Mekaniwati, 2025).

H1: Under financing constraints, students' perceived institutional support differs significantly from benchmark reference levels.

Beyond institutional provision, learning modality constitutes a key structural factor shaping students' exposure to financing constraints. Differences in cost structures, access to institutional resources, and reliance on digital infrastructure suggest that students' capacity to sustain academic resilience varies between online and on-campus learning environments, particularly across economically diverse national systems such as Kosovo and the Philippines (Clamor & Saloma, 2023).

H2: Sustainable academic resilience under financing constraints differs significantly between online and on-campus learning in Kosovo and the Philippines.

Sustainable academic resilience is further shaped by the combined influence of specific institutional practices rather than isolated interventions. Empirical studies demonstrate that schedule flexibility reduces time- and cost-related barriers (Yamada, 2009), digital learning resources support academic continuity under constrained conditions (Cheung, 2021), and adaptive assessment practices and institutional support mechanisms strengthen persistence among financially vulnerable students (Demirtaş & Türk, 2022). However, the joint effect of these institutional dimensions across national and modal contexts remains insufficiently examined.

H3: Institutional support dimensions have a significant effect on sustainable academic resilience under financing constraints.

$$H_A \neq F1\mu_1 \neq F2\mu_2 \neq F3\mu_3 \neq F4\mu_4 \neq F5\mu_5$$

Figure 1 confirms that institutional support significantly enhances student success and academic resilience under financial constraints in both Kosovo and the Philippines, with flexible structures, resource access, and communication showing strong positive effects.

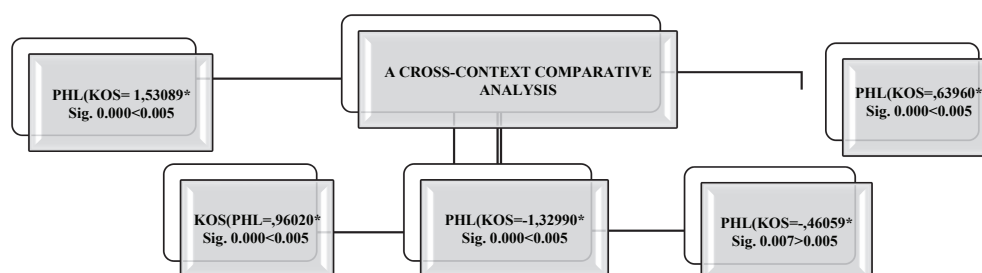


Figure 1. Financing constraints and sustainable academic resilience (Source: Created by the author).

Literature review

Contemporary scholarship increasingly conceptualises financing constraints as a multidimensional determinant of students' academic continuity, linking economic pressure with institutional capacity, equity, and resilience. Research consistently shows that students' financial literacy and behavioural capability influence how financial stress translates into academic engagement. Financial education strengthens responsible financial behaviour and resilience (Leong & Cheng, 2025), while persistent inequities in the ability to exploit financial opportunities underscore the need for equity-oriented interventions (Berlinger et al., 2024). These disparities are strongly shaped by socio-economic background, which continues to influence students' financial trajectories and decision-making under pressure (Lulaj, 2024c). At the same time, targeted financial support mechanisms such as scholarships and merit-based aid demonstrably reduce dropout risks and support persistence, although their effects are often moderate and context-dependent (Silva & Sampaio, 2023; Xie et al., 2020).

Beyond individual capacity, institutional support structures play a decisive role in mediating the effects of financing constraints. Robust institutional frameworks encompassing scholarships, counselling, and flexible tuition arrangements contribute to stabilising academic progression (Rotar, 2022), yet financial aid alone is insufficient when not complemented by broader academic, health, and gender-sensitive support services (Mutevere et al., 2024). Pedagogical and organisational strategies further shape academic sustainability. Active and cooperative learning approaches reduce stress and improve engagement under constrained conditions (Kassim et al., 2025), while institutional policies that address perceived injustice enhance student support for equity-focused initiatives (Salgado & Aguilar, 2022). Digital and managerial infrastructures have become equally critical, with evidence demonstrating that digital support systems and coordinated academic management enhance inclusion, participation, and performance, particularly during transitions to online learning (Bordoloi et al., 2021). These insights directly inform the institutional dimensions examined in this study, including schedule flexibility, communication accessibility, supplementary learning programs, adaptable assessment practices, and access to recorded learning materials.

The resilience literature further emphasises that academic sustainability under financial pressure is shaped by layered institutional, socio-economic, and cultural factors. Students from lower socio-economic backgrounds often possess distinctive strengths derived from lived experience, which, when institutionally recognised, foster confidence and persistence (Hernandez et al., 2021). Nevertheless, financing constraints remain among the most powerful drivers of academic vulnerability, with tuition burdens, unstable income, digital exclusion, and weak institutional support undermining engagement and continuation (OECD, 2023). Evidence from the COVID-19 period highlights that financial and psychological stressors are unevenly distributed across gender, socio-economic status, and first-generation status (Lourie et al., 2023; McCurdy et al., 2023). Experiential learning opportunities such as internships and cooperative programs have been shown to buffer employment-related uncertainty and enhance resilience (Turnquest et al., 2024). Recent studies further stress the importance of personalised, culturally responsive, and student-centred support systems, particularly in online and resource-constrained environments (Emerson, 2025; Marah et al., 2025; Rojas-Alfaro & Enriquez, 2025; Seo et al., 2025). At the system level, the effectiveness of financial support is contingent on broader policy and institutional ecosystems. Financial-aid systems vary substantially in their design and outcomes across national contexts (Dynarski et al., 2023), with evidence from elite institutions showing stress-reducing effects of financial support (Wang et al., 2013) alongside unintended consequences arising from fee policies affecting international and undocumented students (Amuedo-Dorantes & Sparber, 2014). Institutional variation in retention outcomes further reflects the interaction between

financial aid, social integration, and organisational capacity (Kerkvliet & Nowell, 2005). Performance-based aid schemes have demonstrated positive academic effects without displacing other support mechanisms (Lowry et al., 2024), while system-level research highlights the role of university–industry collaboration and financially informed pedagogies in enhancing institutional performance and student competencies (Aghel et al., 2024; Grimm & Blazovich, 2016).

Research methodology

This study uses a quantitative comparative design to examine how institutional support mechanisms influence students' ability to manage financial barriers and maintain academic resilience in higher education institutions. The study examines (a) whether institutional support differs across countries and learning settings, and (b) which support factors predict students' perceived ability to overcome financial constraints.

Five institutional-support constructs were measured:

Table 1 shows that all items used a five-point Likert scale (1-strongly disagree; 5-strongly agree), a validated format for attitudinal measures (Boone & Boone, 2012; Likert, 1932). The survey collected demographic data on gender, age, income category, field of study, education level, and country.

Construct reliability was assessed using Cronbach's alpha, applying the $\alpha \geq 0.70$ criterion (Nunnally & Bernstein, 1994). Reliability evaluation followed established procedures for social-science measurement (Field, 2024).

Data were gathered from 363 students using stratified sampling to ensure demographic and modality representation (2020–2024). Surveys were administered online using a standardised instrument across both countries, consistent with best practices for cross-context comparative studies (Creswell & Creswell, 2018).

Analyses were conducted in SPSS. Preliminary diagnostics were performed to verify distributional characteristics and parametric assumptions (Field, 2024). One-sample t-tests were used to assess deviations from benchmark values, while one-way ANOVA, with Levene's tests and post-hoc comparisons, examined differences across demographic groups and countries (Pallant, 2020). A General Linear Model (GLM) evaluated main and interaction effects across countries and learning modalities, following established principles for multifactor designs (Gray & Kinnear, 2011). This approach supported hypothesis testing (H1–H3) and enabled the identification of patterns related to financial barriers, academic resilience, and institutional support (Banks & Fienberg, 2003). To further strengthen the robustness of the findings, multiple regression analysis was conducted to examine the predictive effects of the five institutional-support constructs (F1–F5) on students' perceived institutional support, consistent with recommended guidelines for predictive modelling (Hayes & Coutts, 2020).

Research results

This section presents the empirical results of the study. Table 2 shows that the sample ($N = 363$) is well balanced across countries, gender, degree level, and field of study, supporting meaningful inferential comparisons.

Table 1. Clarifying the Variables Involved in the Study (Source: Created by the author).

Item	Constructs	Source
	Dependent variable: Financing constraints and sustainable academic resilience	Bradley & Fry (2024);
	Independent variables (F1, 2, 3, 4, and 5)	Lulaj (2021);
F1	Accommodation of student needs through adjusted lecture schedules during online and on-campus learning, considering financial hurdles.	Lulaj et al. (2021); Lulaj & Dragusha (2022)
F2	Comfort in communicating financial and academic needs with professors and administrative staff.	
F3	Access to supplementary learning programs despite associated costs, to overcome academic difficulties linked to financial barriers.	
F4	Flexibility in assessment schedules, accounting for students' financial challenges.	
F5	Provision of recorded lectures and course materials to mitigate issues from poor internet connectivity during online learning.	

Table 3 shows uniformly low perceived institutional support (means 2.3–3.0), with significant negative deviations ($p < .001$), indicating structural support gaps that undermine students' resilience and stability, particularly under financial constraints.

Table 4 confirms homogeneous variances ($p > .05$) and significant group differences ($p < .001$), showing that institutional support varies across contexts due to funding, digital, and policy conditions.

Table 5 shows that Kosovo students report higher institutional support across all factors, especially in flexible scheduling and supplementary programs, reflecting stronger organisational and digital capacity compared to the Philippines. For university leaders, this emphasises the need to prioritise investment in flexible scheduling systems and digital learning tools, particularly in the Philippines, where such infrastructures appear more limited.

Table 2. Sample demographics (Source: Created by the author).

Variable	Category	n	%
Country	Kosovo	200	55.1
	Philippines	163	44.9
Degree level	Bachelor	188	51.8
	Master	175	48.2
Gender	Male	180	49.6
	Female	183	50.4
Field of study	Economics / Business Administration	110	30.3
	Finance	95	26.2
	Tourism / Hospitality	58	16.0
	Accounting /Auditing	100	27.5
Total		363	100.0

Table 3. OST (Source: Created by the author).

Cons.	Mean	SD	SE	t	p
F1	3.0	1.3	0.08	-575.6	<.001
F2	2.6	1.4	0.09	-556.4	<.001
F3	2.8	1.4	0.09	-530.5	<.001
F4	2.3	1.2	0.07	-636.8	<.001
F5	2.4	1.1	0.07	-670.8	<.001

Note: One-Sample Test (OST), Test Value = 50, Construct (Cons.), Standard Deviation (SD); Standard Error (SE).

Table 4. Levene's test and ANOVA (Source: Created by the author).

Cons.	Levene p	ANOVA p
F1	.547	< .001
F2	.102	< .001
F3	.164	< .001
F4	.499	.007
F5	.222	< .001

Table 5. Multiple comparisons (Tukey HSD) (Source: Created by the author).

Cons.	Mean (KOS)	Mean (PHL)	Diff (PHL-KOS)	p
F1	3.76	2.23	-1.53089	< .001
F2	3.10	2.14	-0.96020	< .001
F3	3.45	2.12	-1.32990	< .001
F4	2.78	2.32	-0.46059	.007
F5	2.95	2.31	-0.63960	< .001

Table 6 confirms consistent directional differences between the two countries, with Kosovo appearing in the higher-support subset and the Philippines in the lower subset across most factors. Although differences are not statistically significant at $\alpha=.05$ in subset grouping, the repeated pattern across three methods (Tukey, Duncan, Hochberg GT2) reinforces a structural imbalance in support for financial and managerial systems.

Table 7 shows that homogeneity of error variances is satisfied ($p = .840$), enabling valid multivariate comparisons. The reliability coefficient ($\alpha = .847$) confirms strong internal consistency across the five institutional-support constructs.

Table 8 shows that institutional support significantly strengthens students' financial resilience ($F = 9.50$, $p < .001$), with flexible scheduling and supplementary programs having the strongest effects, particularly in Kosovo due to stronger structural and funding frameworks.

Table 9 shows that all institutional factors significantly predict perceived support ($R^2 = .883$), with flexible schedules and recorded materials being the strongest, highlighting the role of digital flexibility in supporting financially constrained students.

Table 6. Homogeneous subset means by country across post-hoc tests ($\alpha = .05$) (Source: Created by the author).

Cons.	Country	Tukey HSD	Duncan	Hochberg GT2
F1	PHL	2.09 (S1)	2.09 (S1)	2.09 (S1)
	KOS	3.62 (S2)	3.62 (S2)	3.62 (S2)
	Sig.	.31 / .58	.15 / .32	.38 / .69
F2	PHL	2.02 (S1)	2.02 (S1)	2.02 (S1)
	KOS	2.98 (S1)	2.98 (S1)	2.98 (S1)
	Sig.	.12	.06	.14
F3	PHL	1.99 (S1)	1.99 (S1)	1.99 (S1)
	KOS	3.32 (S2)	3.32 (S2)	3.32 (S2)
	Sig.	.17	.07	.20
F4	PHL	2.06 (S1)	2.06 (S1)	2.06 (S1)
	KOS	2.52 (S2)	2.52 (S2)	2.52 (S2)
	Sig.	.09	.50	.11
F5	PHL	1.96 (S1)	1.96 (S1)	1.96 (S1)
	KOS	2.60 (S2)	2.60 (S2)	2.60 (S2)
	Sig.	.58	.32	.68

Note. Subset 1 (S1); Subset 2(S2). Higher means reflect stronger perceived institutional support.

Table 7. Levene's test (Source: Created by the author).

Levene's Test of Equality of Error Variances				Reliability Statistics	
Dependent Variable: State/ Country				Cronbach's Alpha	N of Items
F	df1	df2	Sig.		
19,317	77	175	0,840	.847	5

Table 8. Between-subjects effects (Source: Created by the author).

Tests	F	p	Partial η^2
Corrected Model	9.50	<.001	0.95
Intercept	1331.17	<.001	0.85
F1	15.97	<.001	0.72
F2	1.23	0.30	0.82
F3	4.33	0.002	0.97
F4	1.01	0.41	0.72
F5	2.01	0.09	0.93

Table 9. Multiple regression predicting perceived institutional support (Source: Created by the author).

Predictor (Cons.)	B	SE	β	t	p	VIF
Constant	0.609	0.055	—	11.061	< .001	—
F1	0.209	0.012	0.375	18.071	< .001	1.089
F2	0.131	0.014	0.220	9.441	< .001	1.369
F3	0.146	0.017	0.225	8.553	< .001	1.744
F4	0.152	0.019	0.234	7.883	< .001	2.222
F5	0.174	0.016	0.297	11.041	< .001	1.833

Note: Model Fit: $R = .940$; $R^2 = .883$; Adjusted $R^2 = .881$; $SE = .233$ $F(5, 296) = 445.844$, $p < .001$; Durbin-Watson = 1.782.

Table 10. Hypotheses verification (Source: Created by the author).

Hypothesis	Evidence	Interpretation
H1	OST shows very large significant differences from benchmark ($p < .001$)	Supported
H2	ANOVA and Tukey tests show significant KOS–PHL differences across F1–F5	Supported
H3	GLM results show significant overall model, F1 and F3 strongest predictors	Supported

Table 10 confirms that all three hypotheses are supported. H1 is validated by strong gaps from benchmark values. H2 is supported by significant cross-country differences across all institutional support factors. H3 is confirmed through the GLM model, where F1 and F3 emerge as the strongest contributors to student resilience.

Conclusions

This study demonstrates that institutional support mechanisms are decisive in shaping students' capacity to cope with financing constraints and sustain academic resilience in Kosovo and the Philippines. The findings reveal generally low levels of perceived support, with systematic cross-country variation. Flexible lecture scheduling and access to recorded learning materials emerged as the strongest predictors of resilience, highlighting the importance of institutional responsiveness and digital accessibility. Kosovo's higher scores across support dimensions reflect more cohesive administrative and digital structures, whereas lower scores in the Philippines indicate persistent structural and resource constraints. Importantly, the comparative analysis shows that financing constraints are mediated by institutional context: similar pressures generate different resilience outcomes depending on governance coherence, policy implementation, and support capacity. These results extend the literature by empirically illustrating how institutional design moderates the academic consequences of financial pressure.

Post-pandemic financial pressures continue to restrict students' resources, undermining academic continuity and stability (Alteri, 2023; Lintner, 2024; Monks, 2009). In line with Lulaj (2024b), resilience is structurally conditioned, shaped by financial behaviour, institutional planning, and coordinated support mechanisms. The five institutional dimensions: schedule flexibility, faculty communication, supplementary programs, assessment adaptability, and access to recorded materials function as interrelated mechanisms mitigating financial vulnerability and stabilising learning conditions (Cohen, 1988; Hair et al., 2019; Kahu & Nelson, 2018; Lulaj, 2022b). These results are consistent with prior evidence showing that insufficient financial and administrative support undermines academic continuity and amplifies inequality (Woessmann, 2016).

The observed low institutional support aligns with evidence that insufficient resources compromise continuity and amplify inequalities (Beiter et al., 2015; Radhamani & Kalaivani, 2021; Wang et al., 2026). Cross-country differences show that stronger organisational and digital infrastructures, as in Kosovo, enhance resilience, supporting prior work on institutional climate and student outcomes (Fang et al., 2025). Flexible scheduling and digital access emerge as critical predictors, highlighting the role of responsive teaching environments and adaptable support systems in sustaining academic performance under financial pressures (Cai & Meng, 2025; Yu et al., 2025). These findings extend existing literature by demonstrating that resilience is an emergent property of institutional support, not merely an individual trait, reinforcing ecological perspectives on student resilience (Ungar, 2012).

This study provides robust scientific and practical contributions by demonstrating how institutional context shapes resilience outcomes under financial constraints. Scientifically, it offers empirical evidence that advances understanding of the mechanisms linking support structures to student resilience. Practically, it highlights actionable measures, such as flexible scheduling, access to recorded materials, and strengthened institutional support, that can enhance resilience under financial pressure. From a policy perspective, the findings indicate that targeted institutional reforms, particularly expanded flexible scheduling, systematic provision of recorded materials, and strengthened supplementary support, can substantially improve academic resilience under constrained conditions. Despite these insights, several limitations should be acknowledged. The cross-sectional design limits causal interpretation, the use of self-reported data may introduce bias, and the focus on two countries constrains generalizability. Future research should adopt longitudinal and multi-country designs to examine further how institutional and funding structures shape sustainable academic outcomes over time.

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