

Development and Empirical Validation of the Higher Education Student Experience Scale: Assessing Multidimensional Student Experience in Higher Education

Daiki Kato

`daiki-k@kinjo-u.ac.jp`

Kinjo Gakuin University

Shion Akiyama

Kinjo Gakuin University

Miho Nakazawa

Kinjo Gakuin University

Short Report

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Development and Empirical Validation of the Higher Education Student Experience Scale: Assessing Multidimensional Student Experience in Higher Education

Daiki Kato ^{*†}

Shion Akiyama ^{*}

Miho Nakazawa ^{*}

Abstract

Evaluating Student Experience (SX) in higher education has become an essential priority for Institutional Research (IR) to ensure educational quality and foster holistic student growth. Traditional evaluation frameworks often prioritize isolated course satisfaction, frequently missing the multidimensional process through which students integrate academic knowledge, career preparation, and institutional identity. This study developed and validated the Higher Education Student Experience Scale, a 25-item psychometric instrument tailored to comprehensively measure the core facets of student experience across higher education contexts. Data were collected from a large-scale sample of 2,456 university students. A Confirmatory Factor Analysis (CFA) was conducted to evaluate the hypothesized 5-factor structure: (1) Diversity of Future Career Options Connected from Curriculum, (2) Socially-Connected Learning, (3) Knowledge Acquisition and Personal Growth, (4) Diverse Learning Experiences and Support Environment, and (5) Institutional Identity and Campus Belongingness. The CFA model demonstrated robust structural validity (CFI = .926, TLI = .916, RMSEA = .067, SRMR = .060). All 25 items exhibited strong standardized factor loadings ranging from .612 to .837. Internal consistency was exceptionally high across all subscales ($\alpha = .86$ to .90). The scale provides a psychometrically sound, generalizable diagnostic framework for higher education institutions and IR offices to monitor student experience and drive continuous educational enhancement.

Keywords: Student Experience (SX), Institutional Research (IR), Higher Education, Scale Development

1 Introduction

In modern higher education, institutional evaluation has shifted from superficial course satisfaction surveys toward holistic assessments of Student Experience (SX). With the conceptualization of SX as a comprehensive framework [2], evaluating the multidimensional facets of student life and learning environments has received increasing scholarly focus. Recent empirical studies have developed specialized scales to measure student experience across diverse institutional and cultural dimensions [3, 4]. Building upon psychological framework evaluations such as the BM-UX model [1], there is a growing imperative to assess how students integrate academic learning into personal identity, psychological safety, and future professional pathways.

While conventional metrics in Institutional Research (IR) effectively capture immediate course-level feedback, they often fail to reflect how students connect curricular experiences with future career identities, personal growth, and institutional belongingness. To address these limitations, the Kinjo Student Experience Scale (KSX) conceptualizes the university student experience through five distinct yet inter-related factors:

1. **Diversity of Future Career Options Connected from Curriculum:** The degree to which practical coursework and experiential learning broaden students' post-graduation career visions.
2. **Socially-Connected Learning:** The extent to which students perceive their academic studies as applicable and meaningful to real-world societal contexts.

^{*}Kinjo Gakuin University

[†]Corresponding author

3. **Knowledge Acquisition and Personal Growth:** The internal realization of skill development, expertise enhancement, and individual growth since enrollment.
4. **Diverse Learning Experiences and Support Environment:** The opportunity to engage in interdisciplinary learning and utilize comprehensive institutional support systems.
5. **Institutional Identity and Campus Belongingness:** The sense of security, alignment with institutional values and educational philosophies, and comfort within the campus culture.

To establish the psychometric foundation of the proposed framework, this study addresses the following research questions:

- **RQ1:** Does the hypothesized 5-factor structure of the KSX exhibit adequate structural validity and model fit when evaluated on a large-scale university student sample?
- **RQ2:** Do the 25 items of the KSX demonstrate sufficient indicator reliability and internal consistency to serve as a standardized diagnostic instrument for higher education evaluation?

2 Method

2.1 Ethical Considerations

The research protocol, survey design, and data management plans were formally reviewed and approved by the Institutional Quality Assurance Committee of Kinjo Gakuin University. Prior to participation, all respondents were informed about the study’s objectives, the voluntary nature of their participation, and strict confidentiality protections. Digital informed consent was obtained prior to questionnaire administration.

2.2 Participants and Data Collection

Data were gathered from a total of $N = 2,456$ undergraduate students across diverse academic departments at Kinjo Gakuin University. The survey was administered digitally via the official student portal.

2.3 Measure and Statistical Analysis

The KSX consists of 25 items distributed evenly across the five hypothesized factors (5 items per factor). All items were rated on a 5-point Likert scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*).

To evaluate structural validity, a Confirmatory Factor Analysis (CFA) using Maximum Likelihood (ML) estimation was conducted using the `lavaan` package in R. Model fit was evaluated using standard psychometric criteria: Comparative Fit Index ($CFI \geq .90$), Tucker-Lewis Index ($TLI \geq .90$), Root Mean Square Error of Approximation ($RMSEA \leq .08$), and Standardized Root Mean Square Residual ($SRMR \leq .08$). Internal consistency reliability for each factor was evaluated using Cronbach’s α .

3 Results and Discussion

The 5-factor model yielded adequate fit to the empirical data: $\chi^2(265) = 3215.054, p < .001$, $CFI = .926$, $TLI = .916$, $RMSEA = .067$ (90% CI [.065, .069]), and $SRMR = .060$.

Internal consistency for all subscales was excellent, with Cronbach’s α coefficients ranging from .86 to .90. Standardized factor loadings (λ) across all 25 items were statistically significant ($p < .001$) and demonstrated strong indicator reliability:

- **Factor 1 (Diversity of Future Career Options):** $\alpha = .87$ (loadings ranged from .698 to .813).
- **Factor 2 (Socially-Connected Learning):** $\alpha = .90$ (loadings ranged from .761 to .823).
- **Factor 3 (Knowledge Acquisition & Growth):** $\alpha = .87$ (loadings ranged from .700 to .804).
- **Factor 4 (Diverse Learning & Support Environment):** $\alpha = .87$ (loadings ranged from .690 to .837).

- **Factor 5 (Institutional Identity & Campus Belongingness):** $\alpha = .86$ (loadings ranged from .612 to .830).

Inter-factor correlations ranged from $r = .543$ (between Factor 2 and Factor 4) to $r = .914$ (between Factor 1 and Factor 2), confirming strong theoretical coherence while maintaining factor distinction. The complete list of translated items and their standardized factor loadings are presented in Table 1.

The empirical validation of the KSX confirms that student experience in higher education is a cohesive, multi-faceted construct linking academic learning, practical application, personal growth, and institutional identity. The KSX serves as an actionable, psychometrically sound diagnostic tool for higher education administrators and IR offices to continuously evaluate and improve educational programs.

Table 1: Factor Structure and Standardized Loadings of the Kinjo Student Experience Scale (KSX)

Item	Item Text (English Translation)	Std.all (λ)
Factor 1: Diversity of Future Career Options Connected from Curriculum		
sx1	I can learn practically through practical training and exercises.	.698
sx2	Interacting with practical fields and real society through coursework broadens my vision for the future.	.768
sx3	I can deepen my understanding of specialized knowledge through experiential classes.	.745
sx4	Through my learning in coursework, I can specifically envision my options after graduation.	.777
sx5	I can develop my own abilities through my learning in coursework.	.813
Factor 2: Socially-Connected Learning		
sx6	Through my learning at university, I can gain a tangible sense of connection to my future career and work.	.819
sx7	I can learn practically through classes linked to real-world societal issues.	.787
sx8	I can envision applying the specialized knowledge of my department in real society.	.823
sx9	I can learn while engaging with practical fields and actual society.	.761
sx10	I can feel that my learning at university is useful to society.	.822
Factor 3: Knowledge Acquisition and Personal Growth		
sx11	I can step-by-step acquire skills that allow me to play an active role in society.	.786
sx12	I can enhance my specialized expertise.	.796
sx13	I feel that there is a system in place to deepen my understanding in areas of interest.	.804
sx14	I can develop and expand my personal strengths.	.730
sx15	I have been able to feel my own personal growth since entering the university.	.700
Factor 4: Diverse Learning Experiences and Support Environment		
sx16	I can choose the content of my studies according to my interests.	.759
sx17	I can learn by combining multiple academic disciplines.	.837
sx18	I can engage in interdisciplinary learning across departmental boundaries.	.743
sx19	I can acquire multifaceted perspectives related to my department's specialized fields.	.690
sx20	I can choose from a wide variety of courses.	.761
Factor 5: Institutional Identity and Campus Belongingness		
sx21	I can develop an understanding of Christianity, gender, and international cultures.	.612
sx22	I can learn with a sense of security unique to a women's university environment.	.713
sx23	I can learn under an abundant support environment with attentive assistance from the university.	.801
sx24	I can learn in an atmosphere and environment where I can be myself.	.830
sx25	I can resonate with the university's educational slogan, "Strong and Gentle."	.758

References

- [1] Kato, D., Tsuruta, M., Futamura, A., & Tsuruta, T. (2026). Development, Refinement, and Empirical Validation of the BM-UX Scale: Integrating Psychological Perspectives into User Experience Evaluation. *Working Paper*.

- [2] Ramirez V., G. M., Cano, S., Mendez, Y., Arango, J., & Moreira, F. (2022). Student eXperience (SX) concept. *2022 17th Iberian Conference on Information Systems and Technologies (CISTI)*, Madrid, Spain, pp. 1–6. <https://doi.org/10.23919/CISTI54924.2022.9820464>
- [3] Amado Mateus, M., Guzmán Rincón, A., & Cuero Acosta, Y. A. (2023). Student experience scale: Factor analysis in higher education institutions. *Frontiers in Education*, 7, 1057651. <https://doi.org/10.3389/feduc.2022.1057651>
- [4] Matus, N., Rusu, V., Rusu, C., & Botella, F. (2024). Evaluating the Student eXperience: A Scale that Includes Cultural Dimensions. In *Social Computing and Social Media (HCII 2024)*, Lecture Notes in Computer Science, pp. 129–142. Springer, Cham. https://doi.org/10.1007/978-3-031-61305-0_9