



Original article. Understanding student behavioral intention in university fitness centers: the roles of service quality and satisfaction. Vol. 12, n. ° 4; p. 1-32, August 2026. <https://doi.org/10.55040/zd850933>

Understanding student behavioral intention in university fitness centers: the roles of service quality and satisfaction

Comprender la intención conductual de los estudiantes en los gimnasios universitarios: el papel de la calidad del servicio y la satisfacción

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Abstract

This study investigates the relationships among service quality, student satisfaction, and behavioral intention in the fitness center at Vietnam National University of Agriculture. The sample consisted of 200 student users of the facility. Data were analyzed using descriptive statistics, higher-order confirmatory factor analysis, structural equation modeling, and bootstrapping. The results show that service quality significantly influences student satisfaction and behavioral intention. At the same time, student satisfaction also positively affects behavioral intention and partially mediates the relationship between service quality and future use. Among the first-order dimensions, assurance, responsiveness, and tangibility contributed most strongly to the higher-order service quality construct. The findings indicate that both evaluative judgment and direct service appraisal shape students' behavioral intention in campus fitness services. By validating an extended higher-order service quality construct, the study suggests that university managers should improve staff professionalism, service responsiveness, and physical conditions while aligning service accessibility with students' daily routines.

Keywords: service quality; student satisfaction; behavioral intention; campus fitness center; higher education; SEM.

Resumen

Este estudio investiga las relaciones entre la calidad del servicio, la satisfacción estudiantil y la intención de comportamiento en el gimnasio de la Universidad Nacional de Agricultura de Vietnam. La muestra estuvo compuesta por 200 estudiantes usuarios de las instalaciones. Los datos se analizaron mediante estadística descriptiva, análisis factorial confirmatorio de orden superior, modelado de ecuaciones estructurales y remuestreo (bootstrapping). Los resultados muestran que la calidad del servicio influye significativamente en la satisfacción estudiantil y la intención de comportamiento. Asimismo, la satisfacción estudiantil también afecta positivamente la intención de comportamiento y media parcialmente la relación entre la calidad del servicio y el uso futuro. Entre las dimensiones de primer orden, la seguridad, la capacidad de respuesta y la tangibilidad contribuyeron de manera más significativa al constructo de calidad del servicio de orden superior. Los hallazgos indican que tanto el juicio evaluativo como la valoración directa del servicio influyen en la intención de comportamiento de los estudiantes en los servicios de gimnasio del campus. Al validar un constructo de calidad del servicio de orden superior ampliado, el estudio sugiere que los administradores universitarios deberían mejorar la profesionalidad del personal, la capacidad de respuesta del servicio y las condiciones físicas, al tiempo que adaptan la accesibilidad al servicio a las rutinas diarias de los estudiantes.

Palabras clave: calidad del servicio; satisfacción estudiantil; intención de comportamiento; gimnasio universitario; educación superior; SEM.

Introduction

Promoting physical health and active lifestyles has become an important concern in contemporary societies. Regular physical activity contributes to physical fitness, psychological well-being, and overall quality of life. However, many university students



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now lead sedentary lives because of academic pressure, prolonged screen time, and limited opportunities for structured exercise. Insufficient physical activity has been linked to negative physical and psychological outcomes among students (San Román-Mata *et al.*, 2020; Lұrc, 2021; Sirojova, 2024). In response, universities have increasingly invested in sports and fitness facilities to encourage exercise and support student well-being. Campus fitness centers are an important part of this effort because they provide students with accessible opportunities for physical activity, stress relief, and the formation of healthy habits. Participation in fitness activities can improve not only physical health but also social interaction, emotional balance, and the overall university experience. However, the availability of sports facilities alone does not guarantee active or sustained participation. Their effectiveness depends largely on the quality of services provided and on whether those services meet students' expectations (Kim and Kim, 2024).

Service quality has long been recognized as a key determinant of satisfaction in service industries. In fitness services, it reflects how well a fitness center delivers services that meet or exceed users' expectations. Previous studies have shown that perceived service quality significantly affects customer satisfaction and behavioral outcomes such as continued use and positive word-of-mouth (Pradeep, Vadakepat and Rajasenan, 2020; Sevilmiş *et al.*, 2022). Many studies have assessed service quality using the SERVQUAL framework of Parasuraman *et al.* (1988), which includes tangibility, reliability, responsiveness, assurance, and empathy. Research has shown that facility conditions, equipment availability, staff professionalism, and staff responsiveness significantly influence users' evaluations and overall satisfaction (Khadka and Khadka, 2022; Rosete, 2022; Nhung and Hoan, 2026). In addition, staff-user interaction has been found to affect service experience, satisfaction, and loyalty in fitness centers (Eskiler and Safak, 2022; Kim and Kim, 2024). Moreover, service quality may also shape behavioral intention, which refers to users' willingness to continue using a service and recommend it to others. Prior studies suggest that satisfaction plays an important mediating role in this relationship, such that higher perceived service quality improves satisfaction and, in turn, strengthens favorable behavioral intentions (Sevilmiş *et al.*, 2022; Ferreira, 2023). This relationship is particularly important in fitness services, where repeated use and recommendation indicate sustained engagement. However, most applications of



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SERVQUAL and the service quality-satisfaction-behavioral intention framework in fitness-service research have been developed or tested primarily in commercial fitness environments. These models often assume that service quality operates through relatively stable dimensions and that satisfaction is the main mechanism translating perceived quality into future behavioral intention. Such assumptions require further examination in campus-based fitness services, where students evaluate services not only as consumers but also as members of an academic community. Their participation is shaped by study schedules, campus mobility, limited budgets, shared-use facilities, and the practical feasibility of integrating exercise into daily university life.

Building on this limitation, the key conceptual issue is whether service-quality models developed in commercial fitness settings can adequately capture how students evaluate service quality in university fitness centers. These settings mainly serve adult customers and differ from university fitness centers, where academic schedules, limited budgets, and the convenience of on-campus facilities may influence students' decisions. As a result, the determinants of satisfaction and continued use in campus fitness centers may differ from those in commercial settings. Specifically, it remains unclear whether traditional SERVQUAL dimensions are sufficient to capture how students evaluate service quality in university fitness centers, or whether campus-relevant dimensions such as accessibility and hygiene should be incorporated to reflect the practical usability and shared-use conditions of these facilities. This suggests that service quality in campus fitness centers may involve both perceived service excellence and practical service usability.

Research on service quality and user satisfaction in university fitness facilities remains limited, especially in developing countries such as Vietnam. The Vietnamese higher education context provides a meaningful setting for international physical education research, as universities in developing higher education systems are increasingly expected to support student health and active lifestyles beyond formal physical education classes (Tran and Marginson, 2018; Quoc, 2024; Quang and Hoa, 2025). In this context, campus fitness centers can operate as institutional resources that connect physical education, student well-being, and voluntary exercise participation. This setting, therefore, provides an opportunity to examine whether service-quality models



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developed primarily in commercial fitness settings can explain students' continued-use intentions in a public university environment shaped by academic routines, institutional provision, and diverse student backgrounds.

Vietnam National University of Agriculture (VNUA) provides a relevant empirical setting for this study. As a public university with a large, geographically diverse student population, VNUA provides an appropriate context for examining how students evaluate campus-based fitness services. However, students' perceptions of service quality, satisfaction, and behavioral intention toward the university fitness center have not been systematically examined. Accordingly, this study investigates the influence of extended service quality on student satisfaction and behavioral intention in the fitness center at VNUA. Specifically, it evaluates service quality based on SERVQUAL dimensions together with context-relevant factors such as accessibility and hygiene, examines their effects on student satisfaction, and tests the role of satisfaction in shaping students' intentions to continue using and recommending the service. By conceptualizing service quality as a higher-order construct that integrates traditional SERVQUAL dimensions with campus-relevant service conditions, this study extends existing service-quality models to the higher-education fitness-service context. It also refines the service quality-satisfaction-behavioral intention framework by examining whether satisfaction fully explains the link between service quality and behavioral intention, or whether service quality retains a direct effect on students' continued use and recommendation intentions. In doing so, the study contributes to the literature on fitness-service quality in higher education and offers practical implications for the management of campus fitness facilities.

Literature review

Service quality in fitness services

Service quality is widely recognized as a key determinant of performance in service industries and is commonly defined as the extent to which a service meets or exceeds users' expectations. In fitness services, it is especially important because users evaluate fitness centers not only as places for exercise, but also as settings for health improvement, stress relief, and positive service experiences (Tae Kim *et al.*, 2016; Jorge Mario and Victor Alfonso, 2023). As a result, service quality in this sector is inherently



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multidimensional. The SERVQUAL framework is commonly used to assess service quality in sports and fitness services through five dimensions: tangibility, reliability, responsiveness, assurance, and empathy (Parasuraman, Zeithaml and Berry, 1988). In fitness settings, these dimensions capture both tangible aspects, such as equipment and facility conditions, and intangible aspects, such as staff support and interaction quality (Ferreira, 2023; Tamanna, 2023). Nevertheless, the application of SERVQUAL in fitness services should not be treated as a purely mechanical transfer of a generic service-quality model. Because fitness centers combine physical facilities, interpersonal support, safety-related expectations, and repeated user participation, the relative importance of each SERVQUAL dimension may vary across service settings and user groups.

Prior studies broadly agree that service quality strongly shapes users' evaluations in fitness services, although they differ in the relative importance of specific dimensions (Polyakova and Mirza, 2016). Some emphasize the physical environment and equipment quality (Pradeep, Vadakepat and Rajasenan, 2020; Jorge Mario and Victor Alfonso, 2023), whereas others highlight interpersonal and experiential factors such as responsiveness, empathy, and customer experience quality (Eskiler and Safak, 2022; Kim and Kim, 2024). Other studies also point to convenience-related attributes, including location, spatial layout, and affordability, as important influences on service evaluation (Khadka and Khadka, 2022; Ferreira, 2023). These differences indicate that service quality in fitness services is not organized around a fixed hierarchy of dimensions. Instead, its structure depends on whether users evaluate the service primarily through physical evidence, staff interaction, experiential value, convenience, or the practical conditions that enable repeated participation. This suggests that the relevance of service-quality dimensions varies across service contexts and user groups. In commercial fitness settings, users often evaluate service quality in relation to price and provider competition. Accordingly, dimensions such as equipment condition, service differentiation, price-value perception, and staff professionalism may become particularly relevant in private gyms or commercial fitness clubs.

In contrast, users in campus-based fitness centers are more likely to emphasize practical usability, including whether the service fits their schedules, routines, and campus mobility. For this reason, dimensions such as accessibility and hygiene may be



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more relevant in university fitness centers. Accessibility reflects whether students can realistically use the facility within their academic timetable, campus movement patterns, and daily routines. Meanwhile, hygiene is especially relevant because university fitness centers are shared-use spaces where many students use the same equipment, changing areas, and exercise environments. Thus, these dimensions represent context-specific extensions of SERVQUAL rather than unrelated additions to the model. While SERVQUAL remains a useful foundation, service quality in higher education fitness settings may need to be understood more broadly as a combination of traditional perceptual quality and context-specific service usability. This broader understanding is important because campus fitness centers are not only service providers but also institutional resources for supporting student health, well-being, and active lifestyles.

Service quality and customer satisfaction

Customer satisfaction is one of the most widely examined outcomes of service quality and generally refers to users' overall evaluation of a service experience relative to their expectations. In fitness services, there is broad agreement that service quality is a major antecedent of satisfaction (Dimaro, 2023; Tamanna, 2023). Prior studies consistently show that facility-related and staff-related attributes significantly shape users' evaluations of fitness services (Pradeep, Vadakepat and Rajasenan, 2020; Khadka and Khadka, 2022). At the same time, satisfaction in fitness settings is influenced not only by technical performance but also by service experience, interaction quality, and exercise involvement (Eskiler and Safak, 2022; García-Pascual, Parra-Camacho and Martínez Rico, 2023; Jorge Mario and Victor Alfonso, 2023). This perspective indicates that satisfaction is formed through a combination of functional, relational, and experiential evaluations rather than through a single aspect of service delivery.

This is especially relevant in campus-based fitness centers, where students' tighter schedules, limited budgets, and restricted alternatives may make accessibility and convenience more important in shaping satisfaction than in commercial fitness contexts. However, these factors should be interpreted as part of the campus-service environment rather than as evidence that convenience alone determines satisfaction. In university fitness centers, students may be satisfied when the facility is not only physically available but also reliable, safe, responsive, and compatible with their academic routines.



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Accordingly, the service quality-satisfaction relationship should be re-examined in university fitness settings rather than assumed to mirror that of private gyms. This provides the basis for examining whether an extended service-quality construct, incorporating both SERVQUAL dimensions and campus-specific usability dimensions, positively influences student satisfaction.

Satisfaction and behavioral intentions

Customer satisfaction is not only an important outcome of service quality but also a strong predictor of future behavioral responses. In service research, behavioral intention typically refers to a user's willingness to continue using a service, revisit it, or recommend it to others. In fitness services, these outcomes are especially important because continued participation is essential for long-term engagement (Zeithaml, 2000; Gocłowska, Piątkowska and Lenartowicz, 2019). Prior studies consistently show that satisfied users are more likely to display favorable behavioral intentions. Rosete (2022) and Sevilmiş et al. (2022) found that satisfaction significantly influences revisit intention and positive word-of-mouth in fitness centers, while Le et al. (2025) reported that satisfaction plays an important role in loyalty development in sports facilities. In the context of university fitness centers, behavioral intention is particularly relevant because the long-term value of these facilities depends not only on initial use but also on students' willingness to maintain participation and recommend the service to peers.

At the same time, the relationship between service quality and behavioral intention may not be fully indirect. Prior research suggests that satisfaction can mediate the relationship between service perceptions and behavioral outcomes without necessarily fully absorbing them (Izogo *et al.*, 2017; Khatoon, Zhengliang and Hussain, 2020). This distinction is particularly relevant to the present study. In campus-based fitness services, a partial mediation pattern is plausible because students may continue using a university fitness center not only because they are satisfied, but also because the service is convenient, accessible, and compatible with everyday academic life. In other words, satisfaction may represent an evaluative pathway, whereas selected service-quality attributes may also create a direct practical pathway to behavioral intention. In this sense, some service-quality dimensions may influence behavioral intention both through satisfaction and through their direct practical relevance, especially tangibility and



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accessibility. This distinction extends the conventional service quality-satisfaction-behavioral intention framework by allowing for both satisfaction-based evaluation and direct service appraisal in explaining students' continued-use and recommendation intentions.

Conceptual framework and hypotheses

Based on the literature reviewed above, this study proposes a conceptual model linking service quality, student satisfaction, and behavioral intention in a university fitness center. Service quality is conceptualized as a multidimensional construct grounded in the SERVQUAL framework, comprising tangibility, reliability, responsiveness, assurance, empathy, and context-relevant dimensions such as accessibility and hygiene. These two additional dimensions are included to capture the practical usability and shared-use conditions of campus fitness services. Accordingly, service quality is not treated merely as a direct replication of the traditional SERVQUAL structure, but as an extended construct adapted to the higher-education fitness-service context. Within this framework, student satisfaction refers to students' overall evaluation of their experience with the fitness center. In contrast, behavioral intention refers to their willingness to continue using the service and recommend it to others. Accordingly, the following hypotheses are proposed:

H1: Service quality positively influences student satisfaction.

H2: Service quality positively influences students' behavioral intention.

H3: Student satisfaction positively influences students' behavioral intention.

H4: Student satisfaction mediates the relationship between service quality and behavioral intention.

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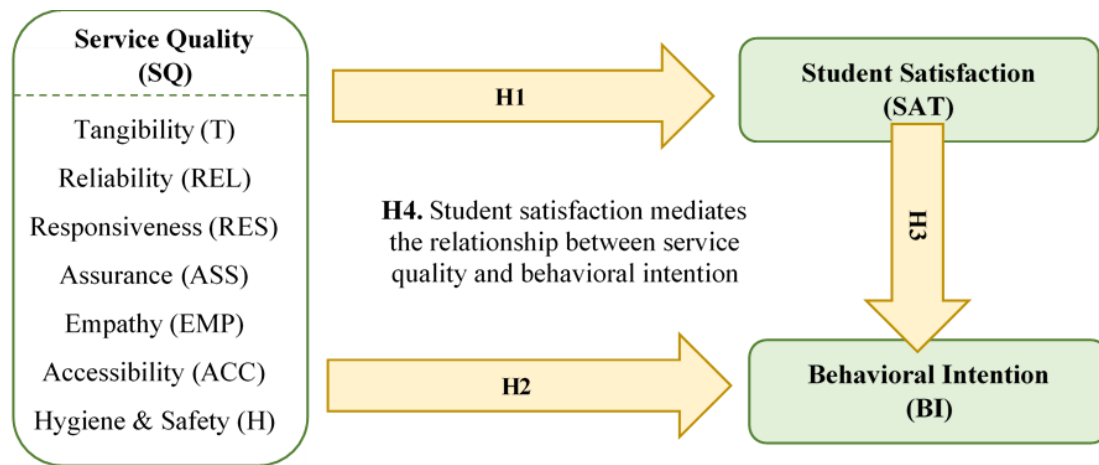


Figure 1. Conceptual Framework

Methodology

Research context

This study was conducted at the fitness center of Vietnam National University of Agriculture (VNUA), a famous public university in Hanoi, Vietnam. The university has a diverse student population from a range of academic disciplines and geographical backgrounds. The campus fitness center provides students with opportunities for physical exercise and health-related activities. The VNUA context is particularly relevant because it includes students from diverse geographical backgrounds, including rural and mountainous areas, which allows the study to explore whether perceptions of campus fitness services vary across student groups. In this setting, the university fitness center serves as an important on-campus resource for promoting active lifestyles and student well-being.

Sampling and data collection

Data were collected from September to December 2025 using a structured questionnaire distributed online via Google Forms and directly at the fitness facility. The target respondents were VNUA students who had used the university fitness center. A non-probability purposive sampling approach was used because the study targeted students with experience of using the university fitness center. Respondents were eligible if they were enrolled students at VNUA and had used the fitness center at least once before completing the questionnaire. A total of 200 valid responses were retained for analysis, which was considered adequate for structural equation modeling in AMOS.



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Participation was voluntary, and respondents were informed that the data would be used solely for academic research purposes.

Table 1 presents the demographic profile of the respondents. Of the 200 participants, 52.0% were male, and 48.0% were female. The sample included students from all academic years and four major fields of study: agriculture, economics, natural sciences, and humanities and social sciences. Geographically, 26.0% were from urban areas, 50.0% from rural areas, and 24.0% from mountainous areas. Most respondents used the fitness center one to three times per week (59.0%), followed by those using it four times or more per week (22.0%) and less than once a week (19.0%). Overall, the sample captured the main user groups of the university fitness center.

Table 1. Demographic characteristics of respondents (n=200)

Variable	Category	Frequency	Percentage (%)
Gender	Male	104	52.0
	Female	96	48.0
Academic year	The 1 st year	40	20.0
	2 nd year	40	20.0
	3 rd year	48	24.0
	4 th year	72	36.0
	Agriculture	42	21.0
Major of study	Economic	58	29.0
	Natural science	48	24.0
	Humanities and social science	52	26.0
	Urban	52	26.0
Geographical background	Rural	100	50.0
	Mountainous	48	24.0
Frequency of use	Less than once a week	38	19.0
	1-3 times per week	118	59.0
	4 times or more per week	44	22.0

Measurement instruments

The questionnaire was adapted from established scales on service quality, satisfaction, and behavioral intention in fitness-service research. All items were measured



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on a five-point Likert scale. Demographic information was collected first. Service quality was measured through tangibility, reliability, responsiveness, assurance, empathy, accessibility, and hygiene. Student satisfaction and behavioral intention were adapted from prior studies in fitness and sports contexts (Eskiler and Safak, 2022; Khadka and Khadka, 2022; Sevilmiş *et al.*, 2022; Jorge Mario and Victor Alfonso, 2023; Le *et al.*, 2025).

Each construct in this study was measured using three observed items, yielding 21 items for service quality, 3 for student satisfaction, and 3 for behavioral intention. The five traditional SERVQUAL-based dimensions: tangibility, reliability, responsiveness, assurance, and empathy, were adapted to the university fitness-center context, following the SERVQUAL tradition and its application in fitness-service research (Parasuraman, Zeithaml and Berry, 1988; Huang and Kim, 2023). Accessibility and hygiene were included as context-specific dimensions because campus fitness services are shaped by students' academic schedules, campus mobility, shared-use facilities, and the need for safe and clean exercise conditions. This extension is consistent with recent research emphasizing the role of physical environment, staff interaction, cleanliness, facility conditions, and student sport-facility contexts in shaping service-quality perceptions (Ferreira, 2023; Kim and Kim, 2024; Dinç and Eraslan, 2025). The wording of all items was adjusted to reflect students' experience with the VNUA fitness center rather than general commercial fitness services.

The items were reviewed for clarity, contextual relevance, and consistency with the constructs measured. Minor wording adjustments were made to ensure respondents could understand the items in relation to their experience with the university fitness center. Table 2 presents the measurement constructs, number of items, and representative sample items.

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Table 2. Measurement constructs and sample items

Construct	Number of items	Representative sample item	Conceptual basis
Tangibility	3	The fitness center has adequate and well-maintained exercise equipment.	SERVQUAL-based; adapted to fitness-service facilities (Parasuraman, Zeithaml and Berry, 1988; Huang and Kim, 2023)
Reliability	3	The fitness center provides services as promised.	SERVQUAL-based; adapted to service delivery in the fitness center (Parasuraman, Zeithaml and Berry, 1988; Huang and Kim, 2023)
Responsiveness	3	Staff respond promptly when students need assistance.	SERVQUAL-based; adapted to staff support in fitness services (Parasuraman, Zeithaml and Berry, 1988; Kim and Kim, 2024)
Assurance	3	Staff are knowledgeable and make students feel safe when using the facility.	SERVQUAL-based; adapted to competence and safety-related confidence (Parasuraman, Zeithaml and Berry, 1988; Huang and Kim, 2023)
Empathy	3	Staff show concern for students' individual needs.	SERVQUAL-based; adapted to staff support in fitness services (Parasuraman, Zeithaml and Berry, 1988; Kim and Kim, 2024)
Accessibility	3	The fitness center's location and operating hours are convenient for my study schedule.	Context-specific extension reflecting campus mobility and academic routines (Dinç and Eraslan, 2025)
Hygiene	3	The fitness center maintains clean and safe exercise conditions.	Context-specific extension reflecting shared-use facilities and hygiene/safety aspects (Ferreira, 2023; Kim and Kim, 2024)
Student Satisfaction	3	Overall, I am satisfied with my experience at the fitness center.	Adapted from satisfaction measures in fitness and sports-service research (Sevilmiş <i>et al.</i> , 2022; Huang and Kim, 2023; Kim and Kim, 2024)
Behavioral Intention	3	I intend to continue using the fitness center.	Adapted from behavioral-intention measures in fitness and sports-service research (Sevilmiş <i>et al.</i> , 2022; Kim and Kim, 2024; Le <i>et al.</i> , 2025)

Table 3 shows that students evaluated the fitness center at a moderate to relatively positive level. Tangibility recorded the highest mean score ($M = 3.84$), followed by responsiveness ($M = 3.76$) and empathy ($M = 3.69$). In contrast, accessibility had the lowest mean score ($M = 3.21$), followed by hygiene ($M = 3.34$), indicating room for improvement in convenience, operating conditions, and shared-use facility cleanliness.



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Table 3. Descriptive statistics of the main constructs

Construct	Mean	SD
Tangibility	3.84	0.64
Reliability	3.48	0.70
Responsiveness	3.76	0.67
Assurance	3.55	0.68
Empathy	3.69	0.65
Accessibility	3.21	0.79
Hygiene	3.34	0.72
Student Satisfaction	3.67	0.69
Behavioral Intention	3.74	0.71

Data analysis

The data were analyzed using SPSS 20 and AMOS 24 following five stages. First, descriptive statistics and group difference tests were conducted. Second, first-order CFA was used to assess the measurement properties of each service-quality dimension. Third, second-order CFA was performed to validate service quality as a higher-order construct. Fourth, SEM was used to test the hypothesized paths. Finally, bootstrapping with 5,000 resamples was used to examine the indirect effect of service quality on behavioral intention via student satisfaction (Sarstedt, Ringle and Hair, 2022).

Results

Group differences across student characteristics

Additional analyses were conducted to examine whether student satisfaction and behavioral intention differed across selected demographic and usage-related groups. Independent-samples t-tests and one-way ANOVA were used where appropriate. As shown in Table 4, significant differences were observed across usage frequency groups. Students who used the fitness center 4 or more times per week reported significantly higher levels of satisfaction ($M = 3.92$) and behavioral intention ($M = 4.08$) than those who used it less frequently ($p < 0.001$). This pattern suggests that more frequent users tend to evaluate the service more favorably and are more likely to continue using it. Differences were also found across geographical background groups. Students from rural and mountainous backgrounds reported slightly higher behavioral intention than urban



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students. By contrast, no statistically significant gender differences were found in overall student satisfaction or behavioral intention.

Table 4. Group differences in satisfaction and behavioral intention

Grouping variable	Category	Satisfaction (Mean)	Behavioral Intention (Mean)	Test statistic	Sig.
Usage frequency	Less than once/week	3.41	3.46	F = 12.884	< 0.001***
	1-3 times/week	3.68	3.75		
	More than 4times/week	3.92	4.08		
Geographical background	Urban	3.58	3.61	F = 3.294	0.039*
	Rural	3.69	3.78		
	Mountainous	3.73	3.86		
Gender	Male	3.70	3.77	t = 0.842	0.401
	Female	3.63	3.71		

Note: * $p < 0.050$; ** $p < 0.010$; *** $p < 0.001$.

First-order CFA of service quality (SQ)

A first-order confirmatory factor analysis (CFA) was conducted in AMOS to evaluate the quality of the latent constructs at the first-order level. The first-order dimensions included Tangibility, Reliability, Responsiveness, Assurance, Empathy, Accessibility, and Hygiene. As shown in Table 5, all retained indicators loaded significantly on their intended constructs, with p-values below 0.001 and loadings above the recommended threshold of 0.50. These results indicate that the observed variables adequately represented their corresponding first-order latent constructs.



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Table 5. Reliability of the first-order constructs

Construct	Items	Factor loadings	S.E	C.R	p-value
REL	REL1	.827			
	REL2	.857	.083	11.947	***
	REL3	.732	.089	10.629	***
H	H3	.723			
	H1	.777	.115	9.531	***
	H2	.807	.114	9.724	***
ACC	ACC3	.807			
	ACC2	.778	.092	9.739	***
	ACC1	.675	.086	8.813	***
EMP	EMP3	.719			
	EMP2	.763	.112	8.708	***
	EMP1	.727	.116	8.497	***
T	T3	.632			
	T2	.788	.162	7.866	***
	T1	.749	.158	7.752	***
ASS	ASS1	.685			
	ASS2	.721	.146	7.922	***
	ASS3	.728	.133	7.958	***
RES	RES2	.619			
	RES3	.687	.173	6.589	***
	RES1	.614	.169	6.229	***

Note: *** $p < 0.001$.

In addition, the internal consistency and convergent validity of the first-order constructs were assessed using composite reliability (CR) and average variance extracted (AVE), as shown in Table 6. CR values exceeded 0.70, while AVE values were above 0.50, indicating satisfactory reliability and convergent validity. Discriminant validity was also supported, as the square root of AVE for each construct exceeded the corresponding inter-construct correlations (Hu and Bentler, 1999). Overall, these results indicate that the first-order constructs demonstrated acceptable psychometric properties.



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Table 6. Convergent and Discriminant validity of the first-order constructs

	CR	AVE	MSV	Max R(H)	REL	H	ACC	EMP	T	ASS	RE S
REL	0.848	0.651	0.209	0.859	0.807						
H	0.813	0.592	0.321	0.818	0.457***	0.770					
ACC	0.799	0.571	0.329	0.809	0.073	0.166 [†]	0.755				
EMP	0.780	0.542	0.321	0.782	0.342***	0.567***	0.242**	0.737			
T	0.768	0.527	0.233	0.781	0.290**	0.316**	0.474***	0.459***	0.726		
ASS	0.755	0.506	0.362	0.756	0.351***	0.489***	0.390***	0.432***	0.452***	0.712	
RES	0.776	0.511	0.362	0.680	0.294**	0.374***	0.573***	0.338**	0.483***	0.602***	0.641

Note: [†] $p < 0.100$; * $p < 0.050$; ** $p < 0.010$; *** $p < 0.001$.

Second-order CFA of service quality (SQ)

After confirming the adequacy of the first-order constructs, a second-order CFA was conducted to test the higher-order structure of Service Quality (SQ). SQ was specified as a second-order latent construct reflected by Tangibility, Reliability, Responsiveness, Assurance, Empathy, Accessibility, and Hygiene. All seven first-order dimensions loaded significantly on SQ (p -values < 0.001 and factor loadings > 0.50), confirming their suitability as indicators of the second-order construct. As shown in Table 7, Assurance ($\beta = 0.752$), Responsiveness ($\beta = 0.721$), and Tangibility ($\beta = 0.648$) made the strongest contributions to SQ. Hygiene/Safety and Empathy showed similar intermediate contributions, whereas Accessibility and Reliability were weaker, though still significant. These results support a higher-order conceptualization of service quality and indicate that both traditional SERVQUAL dimensions and context-relevant attributes, such as accessibility and hygiene, shape students' perceptions.

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Table 7. Second-order factor loadings

Path			Factor loadings	S.E	C.R	p-value
REL	<---	SQ	.580	.250	4.126	***
H	<---	SQ	.630	.258	4.446	***
ACC	<---	SQ	.509	.267	4.109	***
EMP	<---	SQ	.633	.274	4.417	***
T	<---	SQ	.648	.233	4.288	***
ASS	<---	SQ	.752	.270	4.581	***
RES	<---	SQ	.721	.266	4.330	***

Note: *** $p < 0.001$.

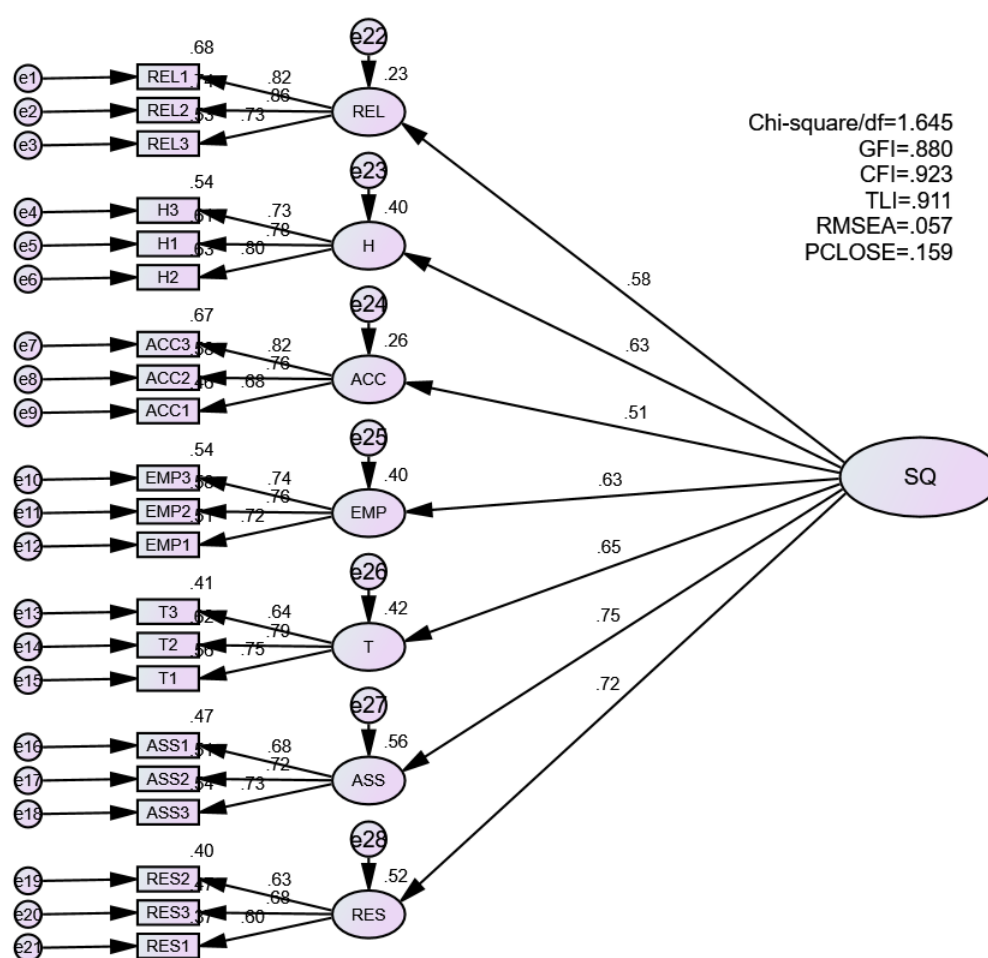


Figure 2. Contribution of first-order factors to the second-order factor

Overall measurement model fit

The overall higher-order measurement model demonstrated an acceptable fit to the data. As shown in Table 8, the model fit indices were within commonly accepted thresholds: CMIN/DF = 1.597, CFI = 0.911, TLI = 0.901, and RMSEA = 0.055. These results support the adequacy of the measurement model and indicate that the proposed higher-order

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structure of service quality is appropriate for the present data (Hu and Bentler, 1999; Hair, Anderson and Black, 2016).

Table 8. Overall measurement model fit indices

Fit index	Value	Recommended threshold
CMIN/DF	1.597	< 3.000
GFI	0.848	> 0.800
CFI	0.911	> 0.900
TLI	0.901	> 0.900
RMSEA	0.055	< 0.080
PCLOSE	0.187	> 0.050

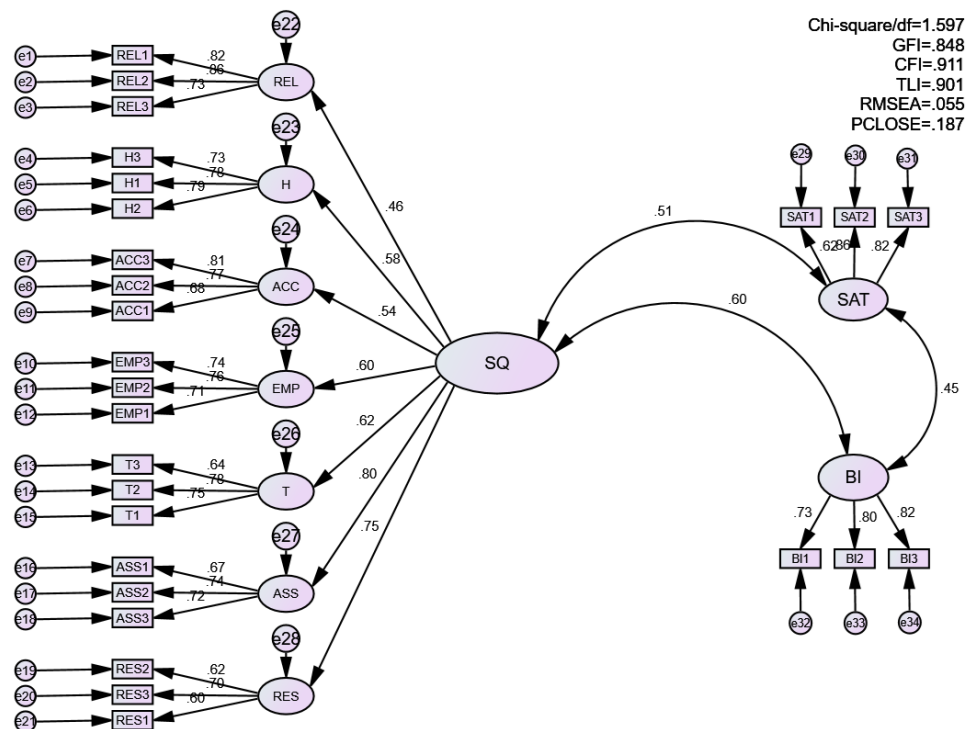


Figure 3. Model fit in CFA

The observed variables were then re-evaluated in the overall model. All observed variables were statistically significant (p -values < 0.001), and all standardized factor loadings exceeded 0.50, as shown in Table 9. These results indicate that the observed variables exhibited acceptable fit and satisfactory explanatory power for their respective latent constructs.



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Table 9. Reliability of the observed variables in the overall model

Constructs	Items	Factor Loadings	S.E	C.R	p-value
SAT	SAT1	.624			
	SAT2	.864	.192	8.698	***
	SAT3	.818	.178	8.660	***
BI	BI3	.822			
	BI2	.797	.086	10.798	***
	BI1	.731	.090	10.096	***
REL	REL1	.824			
	REL2	.860	.085	11.763	***
	REL3	.731	.090	10.558	***
H	H3	.733			
	H1	.782	.115	9.470	***
	H2	.794	.113	9.529	***
ACC	ACC3	.814			
	ACC2	.767	.093	9.411	***
	ACC1	.680	.086	8.736	***
EMP	EMP3	.741			
	EMP2	.757	.109	8.637	***
	EMP1	.712	.112	8.394	***
T	T3	.638			
	T2	.777	.159	7.804	***
	T1	.754	.157	7.748	***
ASS	ASS1	.673			
	ASS2	.740	.149	8.079	***
	ASS3	.718	.134	7.946	***
RES	RES2	.617			
	RES3	.702	.179	6.562	***
	RES1	.601	.170	6.096	***

Note: *** $p < 0.001$.

The results in Table 10 present that all CR values exceeded 0.70 and all AVE values exceeded 0.50, indicating satisfactory reliability and convergent validity. In addition, the square roots of the AVEs were larger than the correlations among the latent variables, and the MSV values were smaller than the AVEs, supporting discriminant validity (Hair, Anderson and Black, 2016).



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Table 10. Convergent and Discriminant validity

	CR	AVE	MSV	MaxR(H)	SAT	BI	SQ
SAT	0.817	0.602	0.261	0.849	0.776		
BI	0.827	0.615	0.355	0.832	0.452***	0.784	
SQ	0.817	0.598	0.355	0.844	0.511***	0.596***	0.630

Structural model and hypothesis testing

The structural model was estimated to test the hypothesized relationships among Service Quality (SQ), Student Satisfaction (SAT), and Behavioral Intention (BI). As shown in Table 11, Service Quality had a significant positive effect on Student Satisfaction ($\beta = 0.511$, $p < 0.001$), supporting H1. Service Quality also had a significant direct effect on Behavioral Intention ($\beta = 0.494$, $p < 0.001$), supporting H2. In addition, Student Satisfaction had a significant direct effect on Behavioral Intention ($\beta = 0.202$, $p = 0.033$), supporting H3. These findings indicate that both service quality and student satisfaction positively influence students' intention to continue using the fitness center and recommend it to others. The coefficient of determination (R^2) shows that Service Quality explained 46.1% of the variance in Student Satisfaction, while Service Quality and Student Satisfaction together explained 58.5% of the variance in Behavioral Intention.

Table 11. SEM analysis

Paths	Path Coefficient	p-value	Standardized Beta (β)	Results
H1: SAT <--- SQ	0.735	***	0.511	Supported
H2: BI <--- SQ	1.082	***	0.494	Supported
H3: BI <--- SAT	0.393	0.033*	0.202	Supported

Note: * $p < 0.05$; *** $p < 0.001$.

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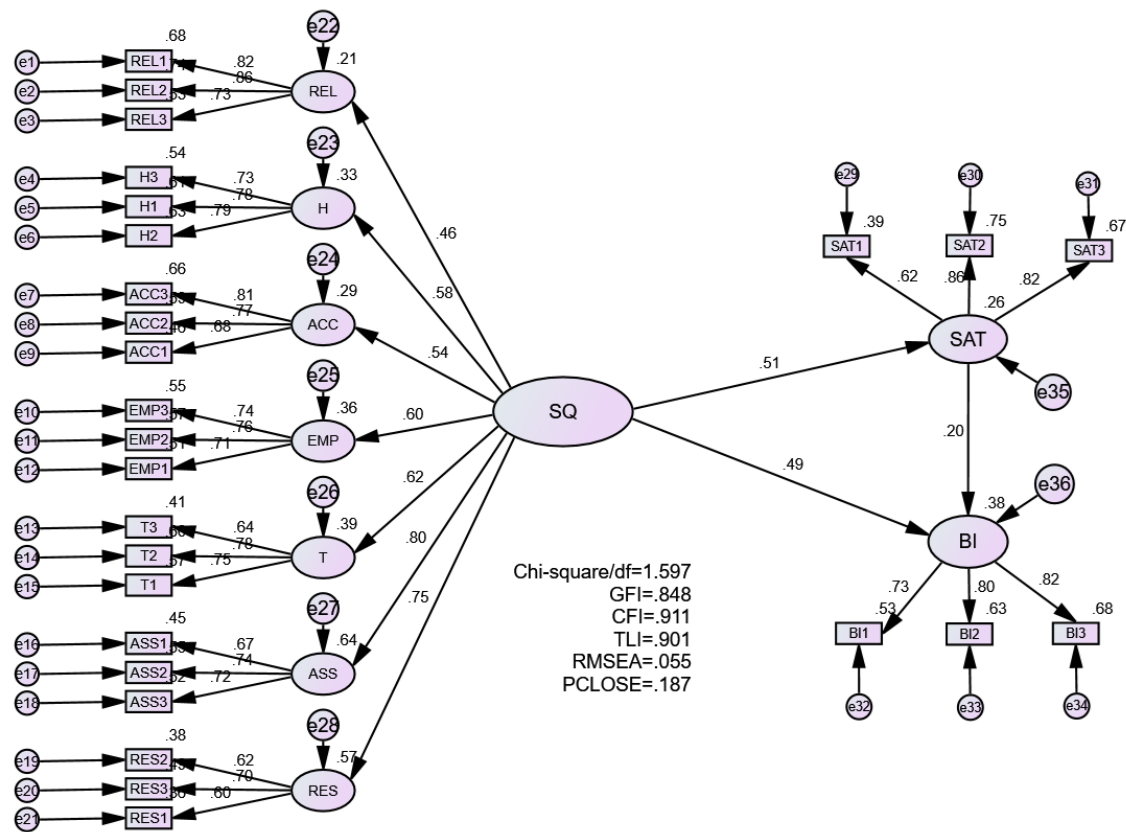


Figure 4. Structural correlations between SQ, SAT, and BI

Mediating role of student satisfaction

The mediating role of student satisfaction was examined using bootstrapping with 5,000 resamples in AMOS. The results in Table 12 indicated that the indirect effect of service quality on behavioral intention through student satisfaction was significant (indirect effect = 0.102, sig. < 0.001). At the same time, the direct effect of service quality on behavioral intention remained significant (direct effect = 0.494, $p < 0.001$). This pattern indicates partial mediation. Therefore, H4 was supported. In substantive terms, higher perceived service quality enhances students' behavioral intention, partly because it improves their overall satisfaction. At the same time, selected aspects of service quality also continue to exert a direct influence on their intended continued use.



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Table 12. Mediation analysis results

Effect	Coefficient Standardized Beta (β)	Result
Direct effect (SQ -> BI)	0.494	Significant
Indirect effect (SQ -> SAT -> BI)	0.102	Significant
Total effect	0.596	Significant

Overall, the findings supported the proposed conceptual framework. Service quality significantly influenced student satisfaction, and student satisfaction significantly influenced behavioral intention. Service quality also had a smaller but significant direct effect on behavioral intention, while student satisfaction partially mediated this relationship.

Discussion

The findings support the proposed model and confirm that service quality significantly influences student satisfaction, and that student satisfaction positively influences behavioral intention in a university fitness center context. This result is consistent with prior research showing that favorable service perceptions in fitness settings enhance user satisfaction and increase the likelihood of continued use and positive word-of-mouth (Pradeep, Vadakepat and Rajasenan, 2020; Eskiler and Safak, 2022; Rosete, 2022). Thus, the established service quality-satisfaction-behavioral intention sequence also applies in a higher-education fitness setting. The findings also clarify how the service quality-satisfaction-behavioral intention framework operates in a campus-based fitness-service context, where student users evaluate service quality under different institutional and practical conditions from those found in commercial fitness centers. In this respect, the findings both support and qualify previous fitness-service research by showing that service quality affects behavioral intention through satisfaction while also retaining a direct effect on students' continued-use and recommendation intentions.

The higher-order CFA results further clarify the internal structure of service quality. Assurance, responsiveness, and tangibility were the strongest contributors to the second-order construct, followed by hygiene/safety and empathy, whereas accessibility and reliability made weaker, though still significant, contributions. This pattern supports



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earlier research emphasizing staff competence, responsiveness, and facility conditions in fitness services, but also suggests that students in a university fitness center evaluate service quality primarily through trust, safety, support, and visible service conditions rather than convenience-related attributes alone. This pattern differs from evidence in commercial fitness-center research, where service evaluation is often discussed in relation to price-value perceptions, provider competition, service differentiation, location, or broader customer loyalty mechanisms (Sevilmiş *et al.*, 2022; Huang and Kim, 2023; Sun and Pan, 2023; Kim and Kim, 2024; Özdemir *et al.*, 2025). In the present university fitness-center context, the strongest components of service quality were assurance, responsiveness, and tangibility. This pattern suggests that student users may not assess campus fitness services mainly through market-based comparison. Instead, they appear to attach greater importance to staff credibility, prompt support, and the visible condition of the exercise environment. In this sense, the internal composition of service quality may vary across contexts even when the overall causal logic remains stable.

The strong contribution of assurance is particularly noteworthy. It suggests that students in the VNUA context assign substantial importance to staff competence, professionalism, and safety-related credibility. The strong roles of responsiveness and tangibility likewise reinforce previous evidence that fitness-service users evaluate both interpersonal support and the physical service environment when forming overall service judgments (García-Pascual, Parra-Camacho and Martínez Rico, 2023; Attri, Bhagwat and Reardon, 2024). This result is also consistent with recent evidence that service encounters and trust-related perceptions play an important role in shaping loyalty-related behaviors in fitness services (Jiménez-Jiménez *et al.*, 2025). Although accessibility remains contextually relevant, its lower loading suggests it may function more as a facilitative condition than as a central driver of overall service-quality perceptions. In an on-campus facility, accessibility may support service use by allowing students to integrate exercise into daily campus routines. In contrast, students' overall quality judgments may depend more strongly on staff professionalism, responsiveness, safety-related confidence, and physical facility conditions. This suggests that, in higher-education fitness settings, service quality should be understood not only as perceived service excellence but also as practical service usability.



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The finding that student satisfaction positively influences behavioral intention is also consistent with previous literature. Satisfaction functions as a key mechanism through which service evaluations are translated into future behavior. Earlier studies have shown that satisfied users are more likely to revisit, continue using, and recommend fitness services (Sevilmiş *et al.*, 2022; Le *et al.*, 2025), and the present study confirms that this mechanism also applies to student users in a campus-based setting. 501-505

The mediation results provide further insight into the mechanism underlying the relationship between service quality and behavioral intention. The finding suggests that students' decisions are shaped by a dual process: an evaluative pathway, in which service quality improves satisfaction and thereby strengthens behavioral intention, and a direct pathway, in which service quality retains an independent influence on future use. This result extends prior studies examining sequential pathways from service quality or service convenience to satisfaction and behavioral intention in fitness services, in which satisfaction often serves as a central mediating mechanism (Özdemir *et al.*, 2025). In this study, satisfaction explains part of the relationship between service quality and behavioral intention. This result indicates that student behavioral intention toward campus fitness services may be shaped by both satisfaction-based evaluation and direct, practical appraisal of service quality. In other ways, students may intend to continue using the fitness center not only because they are satisfied overall, but also because specific service attributes make repeated use feasible, safe, and worthwhile within their academic routines. This indicates that student behavior in campus sport services is shaped by both evaluative judgment and direct service appraisal, rather than by satisfaction alone.

The subgroup analyses provide additional context for interpreting students' satisfaction and behavioral intention. Students who used the fitness center more frequently reported higher satisfaction and stronger behavioral intention, while students from rural and mountainous backgrounds showed slightly stronger behavioral intention than urban students. The finding on usage frequency is consistent with the view that repeated service experiences may reinforce satisfaction and continued use intention. Moreover, differences by geographical background: students from rural and mountainous areas may perceive the campus fitness center as a particularly relevant institutional resource, but this pattern should be regarded as exploratory rather than as evidence of



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unequal external fitness access. Future research should incorporate these variables to examine whether geographical background influences behavioral intention through perceived access, prior experience, affordability, or reliance on campus-based facilities. Overall, the study makes three contributions. Theoretically, it confirms the relevance of the service quality-satisfaction-behavioral intention framework. More importantly, it refines this framework by showing that, in a higher-education fitness setting, service quality influences behavioral intention both indirectly through satisfaction and directly through practical service appraisal. It shows that the internal structure of service quality in higher-education fitness settings is more strongly shaped by assurance, responsiveness, and tangibility than by convenience-related attributes. This finding extends SERVQUAL-based fitness-service research by suggesting that the relative salience of service-quality dimensions is context-dependent rather than fixed across commercial and campus-based fitness settings (Huang and Kim, 2023; Özdemir *et al.*, 2025). Practically, the findings indicate that managers should prioritize safety-related professionalism, responsive staff support, and facility conditions, while also recognizing the contextual importance of accessibility. From a policy perspective, the results suggest that university fitness centers should be viewed as part of student health-support infrastructure rather than merely optional recreational facilities. These implications should be examined further in multi-institutional studies that include direct measures of students' access to external fitness alternatives.

Conclusion and implications

This study examined the relationships among service quality, student satisfaction, and behavioral intention in the fitness center at a higher education institution. The findings confirm that service quality significantly influences both student satisfaction and behavioral intention. At the same time, student satisfaction also positively affects behavioral intention and partially mediates the effect of service quality on future use. The results further show that assurance, responsiveness, and tangibility are the strongest contributors to the second-order service quality construct, suggesting that continued use of a university fitness center is shaped not only by satisfaction but also by service quality grounded mainly in safety, professional support, and physical service conditions. These



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findings support the view that service quality in campus fitness services should be understood as an extended higher-order construct that combines traditional SERVQUAL dimensions with campus-relevant service conditions.

The study extends the service quality-satisfaction-behavioral intention framework to a higher-education sport service setting, demonstrating that both satisfaction-based evaluation and direct service appraisal shape students' behavioral intentions. It also suggests that service quality in university fitness centers should be understood not only as perceived service excellence but also as a structure shaped by students' practical needs and constraints, including academic schedules, campus mobility, shared-use facilities, and the usability of exercise services within everyday university life. Theoretically, the study refines SERVQUAL-based fitness-service research by showing that the relative importance of service-quality dimensions may vary across service contexts. In this campus-based setting, assurance, responsiveness, and tangibility made stronger contributions to the higher-order service quality construct than accessibility and reliability, indicating that students' overall quality judgments depend strongly on staff credibility, prompt support, and visible facility conditions. The partial mediation result further extends the service quality-satisfaction-behavioral intention framework by showing that satisfaction explains part, but not all, of the relationship between service quality and behavioral intention.

Practically, the findings indicate that managers should prioritize assurance, responsiveness, and tangibility, while also aligning accessibility with students' schedules and campus routines. This means that university fitness-center managers should strengthen staff professionalism, provide timely support to student users, maintain equipment and physical conditions, and ensure that opening hours and operating arrangements are compatible with students' academic routines. Although accessibility was not the strongest contributor to the higher-order service quality construct, it remains an important enabling condition because students can only sustain participation when the service is practically reachable and usable within campus life. From a policy perspective, university fitness centers should be viewed as part of institutional efforts to promote student health and active lifestyles, rather than only as optional recreational facilities. Therefore, campus fitness centers may be understood as health-support resources for



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diverse student groups, while differences in external service access should be examined directly in future research.

Despite these contributions, several limitations should be acknowledged. The study was conducted in a single university fitness center, which may limit generalizability. Its cross-sectional design also restricts causal inference, and the non-probability sampling approach may constrain representativeness. In addition, the study measured behavioral intention rather than actual future behavior, and it did not directly assess students' access to off-campus fitness facilities, prior exposure to formal exercise environments, or the availability and affordability of external fitness alternatives. As a result, interpretations concerning geographical background should be treated as exploratory. Future research could address these limitations by examining multiple university fitness centers, using larger and more diverse samples, and adopting longitudinal designs. Additional variables, such as perceived value, exercise involvement, or prior fitness experience, service convenience, perceived accessibility to external fitness options, and actual facility-use behavior, may also help provide a more comprehensive understanding of students' behavioral intention in campus-based fitness services.

References

- Attri, R., Bhagwat, J., & Reardon, J. (2024). Creating a Loyal Clientele: The Role of Service Environment in Health and Fitness Facilities. *Management Dynamics*, 24(1). <https://doi.org/10.57198/2583-4932.1329>
- Dimaro, M. E. (2023). Service Quality for Customers' Satisfaction: A Literature Review. *European Modern Studies Journal*, 7(1), 267–276. [https://doi.org/10.59573/emsj.7\(1\).2023.24](https://doi.org/10.59573/emsj.7(1).2023.24)
- Dinç, Y., & Eraslan, H. (2025). A Study on the Service Quality Perceptions of Students Using Sports Facilities and Businesses in the Student Life Center as A Recreational Area. *Revista Latinoamericana de La Papa*, 29(1), 335–350. <https://papaslatinas.org/index.php/rev-alap/article/view/108>
- Eskiler, E., & Safak, F. (2022). Effect of Customer Experience Quality on Loyalty in Fitness Services. *Physical Culture and Sport. Studies and Research*, 94(1), 21–34. <https://doi.org/10.2478/pcssr-2022-0003>



Original article. Understanding student behavioral intention in university fitness centers: the roles of service quality and satisfaction. Vol. 12, n. ° 4; p. 1-32, August 2026. <https://doi.org/10.55040/zd850933>

- Ferreira, H. (2023). Determinants of service quality influencing customer satisfaction in fitness centers: A systematic review. *European Journal of Human Movement*, 49. <https://doi.org/10.21134/eurjhm.2022.49.3>
- García-Pascual, F., Parra-Camacho, D., & Martínez Rico, G. (2023). Customer Experience in Sports Centres: Adaptation and Validation of a Measurement Scale. *Sustainability*, 15(7), 5954. <https://doi.org/10.3390/su15075954>
- Gocłowska, S., Piątkowska, M., & Lenartowicz, M. (2019). Customer satisfaction and its measurement in fitness clubs of Warsaw. *Economics & Sociology*, 12(2), 205–218. <https://doi.org/10.14254/2071-789X.2019/12-2/12>
- Hair, J., Anderson, R., & Black, B. (2016). *B. B, Multivariate Data Analysis*. Pearson Education.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Huang, Y., & Kim, D. (2023). How Does Service Quality Improve Consumer Loyalty in Sports Fitness Centers? The Moderating Role of Sport Involvement. *Sustainability*, 15(17), 12840. <https://doi.org/10.3390/su151712840>
- Izogo, E. E., Reza, A., Ogba, I. E., & Oraedu, C. (2017). Determinants of relationship quality and customer loyalty in retail banking: Evidence from Nigeria. *African Journal of Economic and Management Studies*, 8(2), 186–204. <https://doi.org/10.1108/AJEMS-01-2016-0011>
- Jiménez-Jiménez, P., Pedragosa, V., Alguacil-Jiménez, M., & Calabuig-Moreno, F. (2025). Analyzing the Value of Social Interaction for Fitness Center Management: The Influence of Service Encounter in Consumer Trust and Loyalty. *Physical Culture and Sport. Studies and Research*, 110(1), 33–47. <https://doi.org/10.2478/pcssr-2025-0022>
- Jorge Mario, R. H., & Victor Alfonso, O. V. (2023). Quality of service in gyms - fitness centers: literature review. *Revista Intercontinental de Gestão Desportiva*, 13(e110065). <https://doi.org/10.51995/2237-3373.v13i3e110065>
- Khadka, A. K., & Khadka, S. (2022). Factors affecting customer satisfaction in fitness



Original article. Understanding student behavioral intention in university fitness centers: the roles of service quality and satisfaction. Vol. 12, n. ° 4; p. 1-32, August 2026. <https://doi.org/10.55040/zd850933>

clubs: Study from Kathmandu Valley. *NCC Journal*, 7(1), 27–32.

<https://doi.org/10.3126/nccj.v7i1.58616>

Khatoun, S., Zhengliang, X., & Hussain, H. (2020). The Mediating Effect of Customer Satisfaction on the Relationship Between Electronic Banking Service Quality and Customer Purchase Intention: Evidence From the Qatar Banking Sector. *SAGE Open*, 10(2), 215824402093588. <https://doi.org/10.1177/2158244020935887>

Kim, M., & Kim, D. (2024). Exploring the Psychological Mechanism of How the Multidimensional Service Quality of Fitness Centers Affects Consumer Satisfaction and Loyalty Depending on the Level of Exercise Involvement. *Behavioral Sciences*, 14(11), 1049. <https://doi.org/10.3390/bs14111049>

Le, T. P., Ngo, S. L., Chau, V. H., & Pham, D. K. (2025). Understanding customer loyalty in sports facilities: Insights into service quality, perceived value, satisfaction and facility image. *Journal of Physical Education and Sport*, 25(1), 71–78. <https://doi.org/10.7752/jpes.2025.01009>

Lực, N. H. (2021). Thực trạng hoạt động thể chất và các hành vi ít vận động của sinh viên Đại học Đà Nẵng trong thời gian giãn cách xã hội do đại dịch Covid-19. *Tạp Chí Khoa Học Giáo Dục Thể Chất và Thể Thao Trường Học*, 33–38 (In Vietnamese).

Nhung, D. T. H., & Hoan, D. D. (2026). Examining the Effects of Service Quality on Student Satisfaction at the Campus Gym Center. *International Journal of Research and Innovation in Social Science*, 10(3), 6503–6517. <https://doi.org/10.47772/IJRIS.2026.100300469>

Özdemir, İ., Sevilmiş, A., García-Fernández, J., & Gálvez-Ruiz, P. (2025). Customer Loyalty and Fitness Centers Competitiveness: The Role of Service Convenience and Multidimensional Perceived Value. *SAGE Open*, 15(3). <https://doi.org/10.1177/21582440251369928>

Parasuraman, A., Zeithaml, V. A., & Berry, L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64, 12–40.

Polyakova, O., & Mirza, M. T. (2016). Service quality models in the context of the fitness industry. *Sport, Business and Management: An International Journal*, 6(3), 360–382. <https://doi.org/10.1108/SBM-04-2014-0015>



Original article. Understanding student behavioral intention in university fitness centers: the roles of service quality and satisfaction. Vol. 12, n. ° 4; p. 1-32, August 2026. <https://doi.org/10.55040/zd850933>

- Pradeep, S., Vadakepat, V., & Rajasenan, D. (2020). The effect of service quality on customer satisfaction in fitness firms. *Management Science Letters*, 10(9), 2011–2020. <https://doi.org/10.5267/j.msl.2020.2.011>
- Rosete, L. (2022). Service Quality, Customer Satisfaction, Consumer Behavior and Business Performance of Health and Fitness Center in Kuwait, UAE. *International Journal of Multidisciplinary Research and Analysis*, 05(05). <https://doi.org/10.47191/ijmra/v5-i5-23>
- San Román-Mata, S., Puertas-Molero, P., Ubago-Jiménez, J. L., & González-Valero, G. (2020). Benefits of Physical Activity and Its Associations with Resilience, Emotional Intelligence, and Psychological Distress in University Students from Southern Spain. *International Journal of Environmental Research and Public Health*, 17(12), 4474. <https://doi.org/10.3390/ijerph17124474>
- Sarstedt, M., Ringle, C. M., & Hair, J. F. (2022). Partial Least Squares Structural Equation Modeling. In *Handbook of Market Research* (pp. 587–632). Springer International Publishing. https://doi.org/10.1007/978-3-319-57413-4_15
- Sevilmiş, A., Özdemir, İ., García-Fernández, J., & Zhang, J. J. (2022). Examining the Relationships Among Perceived Quality, Perceived Value, Customer Satisfaction, and Behavioral Intention in Turkish Fitness Centers. *Physical Culture and Sport. Studies and Research*, 96(1), 40–54. <https://doi.org/10.2478/pcssr-2022-0018>
- Sirojova, Z. N. (2024). The impact of physical activity on the physical health and psychological well-being of students. *BIO Web of Conferences*, 120, 01054. <https://doi.org/10.1051/bioconf/202412001054>
- Sun, S., & Pan, Y. (2023). Effects of Service Quality and Service Convenience on Customer Satisfaction and Loyalty in Self-Service Fitness Centers: Differences between Staffed and Unstaffed Services. *Sustainability*, 15(19), 14099. <https://doi.org/10.3390/su151914099>
- Tae Kim, K., Bae, J., Kim, J.-C., & Lee, S. (2016). The Servicescape in the Fitness Center: Measuring Fitness Center's Services. *International Journal of Sport Management, Recreation & Tourism*, 21, 1–20. <https://doi.org/10.5199/ijsmart-1791-874X-21a>
- Tamanna. (2023). Conceptualizing service quality and satisfaction in fitness services from women's perspective: Evidence from literature and qualitative interviews.



Original article. Understanding student behavioral intention in university fitness centers: the roles of service quality and satisfaction. Vol. 12, n. ° 4; p. 1-32, August 2026. <https://doi.org/10.55040/zd850933>

Asian Journal of Management and Commerce, 4(1), 379–401.

<https://doi.org/10.22271/27084515.2023.v4.i1d.456>

Zeithaml, V. A. (2000). Service Quality, Profitability, and the Economic Worth of Customers: What We Know and What We Need to Learn. *Journal of the Academy of Marketing Science*, 28(1), 67–85. <https://doi.org/10.1177/0092070300281007>