

Understanding Athlete Satisfaction through Service Quality at Majlis Sukan Negeri Kedah Gymnasiums

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ABSTRACT

This study investigates the impact of service quality on athlete satisfaction among state-level athletes registered under Majlis Sukan Negeri Kedah (MSNK) who actively use gymnasium facilities. The primary objective is to assess the level of athlete satisfaction, examine perceptions of service quality, and explore the predictive relationships and differences across sport types. A quantitative research design was employed using a structured questionnaire distributed to 52 state-level athletes across four sports: rugby, cycling, athletics, and Pencak Silat. Data were analysed using SPSS, employing descriptive statistics, correlation, multiple regression, and ANOVA. The findings revealed a high level of overall athlete satisfaction. Significant positive correlations were found between athlete satisfaction and assurance, empathy, responsiveness, and tangibles, while reliability was not statistically significant. Multiple regression analysis highlighted assurance and empathy as the strongest predictors of satisfaction. Furthermore, comparative analysis indicated varying service quality priorities based on sport types. The non-significant impact of reliability suggests that athletes take basic facility consistency for granted as a 'hygiene factor'. These findings emphasise the importance for sports organisations like MSNK to continuously enhance staff engagement and targeted physical infrastructure. Theoretical and practical implications, particularly concerning the contextual nuances of Malaysian state-level sports, are discussed.

Keywords: Service Quality, Athlete Satisfaction, SERVQUAL, MSNK, Sports Management

INTRODUCTION

According to Nuriddinov (2023), physical activity is defined as any physiological movement resulting from skeletal muscle contraction that involves energy expenditure. Regular physical activity is essential for living a healthy lifestyle since it helps avoid chronic diseases. Liu et al. (2024) also note that consistent physical activity improves psychological resilience, mental well-being, and behavioral patterns. Gymnasiums have become key facilities for structured training due to the availability of diverse equipment (Günel & Duyan, 2020). However, rising demand has led to more fitness centres, increasing competition within the industry (Yang & Tang, 2025). As awareness of physical health grows, gym operators must differentiate themselves by providing high-quality services to attract and retain users.

Service quality is critical in ensuring consumer satisfaction and sustaining competitive advantage (Huang & Kim, 2023; Salsabila, 2024). To evaluate this, the SERVQUAL model developed by Parasuraman et al. (1988) is widely utilized, operationalizing service quality through five core dimensions: tangibles, reliability, responsiveness, assurance, and empathy. While the detailed theoretical mechanisms of these dimensions are

explored further in the literature review, their collective effectiveness in gymnasium-based training environments is vital. Athletes uniquely depend on both functional physical facilities and supportive interpersonal staff interactions to optimize their training and performance.

Athlete satisfaction is defined as a positive emotional state resulting from the evaluation of training structures, processes, and outcomes (Chelladurai & Riemer, 1997). Various factors, including coaching quality, facility conditions, and administrative support, shape how athletes perceive their training experience. Despite its importance, there remains a distinct scarcity of research focusing specifically on state-level athletes in the Malaysian context. State-level athletes represent a critical transitional tier between grassroots participation and national elite high-performance sports. Therefore, their service quality expectations may differ vastly from general recreational gym users.

To address this gap, Majlis Sukan Negeri Kedah (MSNK) was purposefully selected as the research site. MSNK serves as a premier sports development hub in northern Malaysia, tasked with nurturing talents for national competitions such as Sukan Malaysia (SUKMA). Understanding facility service quality here provides a critical benchmark for state-funded sports ecosystems. Therefore, the primary objective of this study is to assess the level of athlete satisfaction, examine perceptions of service quality, determine the predictive power of SERVQUAL dimensions, and compare satisfaction levels across different sports at MSNK gymnasiums.

LITERATURE REVIEW

Service Quality

Service quality is widely recognized as an important factor that affects user satisfaction and behavior in sports and fitness settings (Huang & Kim, 2023; Salsabila, 2024). In gymnasium and training facilities, service quality is not only about basic operations, but also includes facility conditions, staff professionalism, and the overall experience given to users (Yang & Tang, 2025; Khanyile et al., 2025). Recent studies show that while all five SERVQUAL dimensions contribute to user experience, their impact varies depending on the setting (Huang & Kim, 2023). For example, Huang and Kim (2023) and Salsabila (2024) found that responsiveness and assurance are stronger predictors of satisfaction in fitness centers, while physical facilities (tangibles) play a secondary but still meaningful role. This pattern suggests that human-centered service elements tend to play a more influential role than physical features in shaping long-term user satisfaction.

Among the SERVQUAL dimensions, tangibles refer to the physical condition of facilities, equipment quality, cleanliness, and environmental comfort. Research in sports settings shows that well-maintained facilities create a positive first impression and support training consistency (Günel & Duyan, 2020), with similar patterns observed in broader service contexts (Kurniyanta et al., 2017). However, studies from Kurniyanta (2017) also note that once basic facility standards are met, tangibles alone do not sustain satisfaction. Instead, they serve as a basic requirement that must be supported by responsive staff and professional service delivery. In structured training environments, athletes often prioritize functional equipment and safe spaces, but their overall satisfaction is more strongly linked to how staff interact with them and address individual needs.

Despite growing literature on service quality in commercial gyms and public sports centers, limited research has examined how these dimensions operate within high-performance training environments involving state-level athletes. Most existing studies focus on general gym users or recreational participants, leaving a gap in understanding how service quality influences athletes who depend on facilities for structured training and competitive preparation. Therefore, this study examines the relationship between perceived service quality and athlete satisfaction within the Majlis Sukan Negeri Kedah (MSNK) gymnasium context, providing targeted insights for sports organizations that support state-level training programmed.

Tangibles

Tangibles refer to the physical aspects of service quality, which include facility conditions, equipment quality, cleanliness, and the overall environment. In sports and gymnasium settings, tangibles are important in shaping users' first impressions and supporting training activities. Studies on sports facilities show that well-

maintained equipment and clean, organized environments help improve user satisfaction and support training consistency (Günel & Duyan, 2020). However, research suggests that the influence of tangibles on satisfaction is often limited once basic standards are met. Although physical conditions such as facility layout and cleanliness affect user perceptions, they cannot sustain long-term satisfaction on their own. Similar patterns are seen in other service sectors where the physical environment supports satisfaction but is not the main factor in overall service evaluation (Kurniyanta et al., 2017). In sports training environments, tangibles are usually seen as a basic requirement rather than a main driver of satisfaction. Athletes expect functional equipment and safe spaces as a standard, but their overall satisfaction is more strongly affected by staff interaction and service quality. This shows that while tangibles are necessary for training, they must be supported by good staff service to improve athlete satisfaction.

Reliability

Reliability refers to the ability of a service provider to deliver consistent and dependable services over time. In sports and gymnasium settings, reliability means maintaining facility availability, ensuring equipment functions properly, and following scheduled training programmes. Reliable service delivery is important for athletes because any disruption or inconsistency can directly affect their training routine and performance preparation. Research in sports facilities shows that reliability contributes positively to user satisfaction by creating a stable and predictable training environment (Günel & Duyan, 2020). When services are delivered consistently, users are more likely to trust the facility and view it as dependable. This is particularly important in structured training environments, where athletes rely on regular access to facilities and equipment to maintain their performance levels. However, studies suggest that the influence of reliability on satisfaction may be limited once it is perceived as a basic expectation. When a facility already provides consistent services, reliability becomes a standard requirement rather than a main factor that increases satisfaction. As a result, while reliability supports overall service quality, it may not strongly improve satisfaction unless it is combined with other dimensions such as responsiveness and empathy. In high-performance sports settings, athletes often take reliability for granted and focus more on how staff interact with them and support their individual training needs.

Responsiveness

Responsiveness refers to the willingness and ability of service providers to assist users quickly and effectively. In sports and gymnasium settings, responsiveness means how fast staff respond to athletes' needs, provide help during training, and solve problems related to equipment or facilities. This dimension is crucial in training environments as immediate support can directly affect the quality and safety of an athlete's training session. Research in sports and fitness facilities shows that responsiveness plays an important role in shaping user satisfaction. Studies indicate that prompt assistance, timely service, and staff availability positively affect how users perceive service quality and their overall experience (Huang & Kim, 2023; Salsabila, 2024). When staff are attentive and respond quickly, users feel more supported. This improves their satisfaction and encourages them to continue using the facility. In high-performance training settings, responsiveness becomes even more critical. Athletes often need quick feedback, guidance, or help during their training, and delays in service can interrupt their routine and reduce training effectiveness. Therefore, responsiveness is not just about convenience, but also about supporting performance. Compared to tangibles and reliability, which are usually seen as basic requirements, responsiveness has a more direct impact on positive service experiences because it addresses athletes' needs in real time. As a result, responsiveness can be seen as a key factor that drives athlete satisfaction. It shows the quality of interaction between staff and athletes. Facilities that show high responsiveness are more likely to create a supportive environment, which is important for both training success and long-term athlete commitment.

Assurance

Assurance refers to the ability of service providers to build trust and confidence through their knowledge, professionalism, and behaviour (Parasuraman et al., 1988). In sports and gymnasium settings, assurance means how well staff show their expertise, give correct advice, and keep the training environment safe and supportive. This dimension is crucial for athletes because their performance and well-being depend on the

credibility and support they receive from staff during training. Research in sports facilities shows that assurance has a strong effect on user satisfaction. Studies indicate that staff competence, professional behaviour, and the ability to make users feel confident positively influence how they view service quality and their overall experience (Huang & Kim, 2023; Salsabila, 2024). When athletes see staff as knowledgeable and trustworthy, they feel more secure and supported. This improves their satisfaction with the facility. In structured training environments, assurance becomes even more important due to the physical and technical demands on athletes. Athletes often need staff guidance on how to use equipment properly, prevent injuries, and follow correct training techniques. Because of this, professional competence is a key part of their experience. Assurance is not only about trust, but also about safety and performance support. Compared to tangibles and reliability, which are usually seen as basic needs, assurance has a more direct impact on athlete satisfaction by building confidence in the staff and facility. Therefore, assurance can be viewed as an important factor that drives athlete satisfaction. It shows the level of trust athletes have in the facility and its staff. Sports organisations that show high professionalism and expertise are more likely to create a safe and reliable environment. This is essential for athlete development and long-term participation in training programmes.

Empathy

Empathy refers to the ability of service providers to offer personalised attention, understand individual needs, and show genuine care towards users (Parasuraman et al., 1988). In sports and gymnasium settings, empathy reflects how well staff recognise athletes' specific training requirements, provide individualised support, and create an environment where athletes feel valued. This dimension is especially important in structured training contexts, where athletes need not only technical guidance but also emotional encouragement and understanding (Sepdanius et al., 2024). Research shows that empathy has a strong effect on user satisfaction and overall experience (Huang & Kim, 2023; Salsabila, 2024). When staff show empathy, athletes are more likely to feel respected and appreciated, which strengthens their emotional connection to the facility. This emotional bond is crucial in gymnasium settings, where athletes spend long hours training and rely on staff for both physical and psychological support.

In sports environments, empathy goes beyond basic customer service and directly supports athlete development. Sepdanius et al. (2024) found that empathetic interactions in sports settings improve athletes' mental resilience, teamwork, and ability to manage stress. Staff and coaches who understand individual struggles can create a more supportive and inclusive training space. This is particularly important for state-level athletes who face high pressure during competition preparation. Furthermore, research links empathetic support to better psychological well-being and improved training outcomes (Yu et al., 2024). Compared to other service quality dimensions, empathy has the strongest impact on athletes' personal experience. While responsiveness focuses on quick service and assurance builds professional trust, empathy creates a deeper emotional connection between staff and athletes. As a result, empathy acts as a key driver of athlete satisfaction because it shows that athletes are understood and supported as individuals. Sports organisations that prioritise empathetic service are more likely to build a positive training environment, improve athlete well-being, and encourage long-term commitment to their programmes.

Athlete Satisfaction

Athlete satisfaction is a multidimensional construct that reflects how athletes evaluate their training experience, including the processes, outcomes, and environment related to their sport (Chelladurai & Riemer, 1997). It is widely recognised as an important factor that influences performance, psychological well-being, and long-term participation in sports. Research shows that athlete satisfaction is closely linked to psychological factors such as resilience, motivation, and coping strategies. Yu et al. (2024) found that satisfaction with training environments helps reduce competitive anxiety by improving psychological resilience and encouraging positive coping methods. Athletes who are satisfied with their training conditions are more likely to build self-confidence, stay motivated, and show positive emotional responses, which support better performance.

Besides psychological factors, athlete satisfaction is also influenced by the quality of training environments and experiences. Prabowo (2024) reported that training quality, competition results, and overall experiences

play a major role in shaping how satisfied athletes feel. Higher satisfaction levels are consistently linked to better performance, showing the importance of structured and supportive training settings. Mental health is also an important part of athlete satisfaction. Studies indicate that athletes who receive proper psychological support and train in positive environments tend to report higher satisfaction and better performance (Juezan & Osorno, 2024). For example, Nazarudin et al. (2023) found high levels of sports performance satisfaction among university athletes, showing that supportive training conditions contribute to both well-being and sporting success.

Overall, existing literature shows that athlete satisfaction is shaped by psychological, environmental, and experiential factors. However, most previous studies focus on training quality and mental health, with limited attention given to how service quality in sports facilities affects athlete satisfaction. This highlights the need to examine the relationship between service quality and athlete satisfaction, particularly in structured training environments such as state-level sports centres.

Relationship Between Service Quality and Athlete Satisfaction

The relationship between service quality and athlete satisfaction has been widely studied in sports management. Evidence indicates that higher perceived service quality leads to greater athlete satisfaction as athletes evaluate their training experience based on both facility conditions and the quality-of-service delivery (Günel & Duyan, 2020; Berber & Mollaoğulları, 2020). Studies also suggest that the influence of service quality on satisfaction is not the same across all dimensions. Berber and Mollaoğulları (2020) found that staff interaction and training programme quality are key factors that shape athlete satisfaction, highlighting the importance of human-centred service. In a larger study of 769 athletes, Günel and Duyan (2020) reported high satisfaction levels when athletes perceived good service quality, confirming a strong link between these two areas.

Based on existing literature, while all SERVQUAL dimensions contribute to satisfaction, those related to staff interaction such as responsiveness, assurance, and empathy have a stronger impact on the athlete experience. In contrast, tangibles and reliability are often viewed as basic requirements. They support the training environment but do not independently drive satisfaction. This pattern shows that athlete's value how services are delivered more than just physical facilities or consistent schedules. The link between service quality and athlete satisfaction is especially important in structured training environments, where athletes need both technical guidance and emotional support to perform well. Good service quality not only improves satisfaction but also supports motivation, mental well-being, and long-term participation in sports. Therefore, examining how different service quality dimensions affect athlete satisfaction is essential for sports organisations that want to improve training conditions and athlete performance.

Service Quality and the SERVQUAL Dimensions

Service quality is widely recognized as an important factor that affects user satisfaction and behavior in sports and fitness settings (Huang & Kim, 2023). In gymnasium facilities, service quality extends beyond basic operations to include facility conditions, staff professionalism, and overall user experience (Yang & Tang, 2025). Among the SERVQUAL dimensions, Tangibles refer to the physical condition of facilities and equipment quality. Well-maintained facilities create a positive first impression (Günel & Duyan, 2020). Reliability refers to the consistent and dependable delivery of services. In structured training, reliable service builds trust (Günel & Duyan, 2020). Responsiveness reflects how quickly and effectively staff address users' needs. Prompt assistance strongly influences satisfaction (Huang & Kim, 2023). Assurance relates to the knowledge, professionalism, and courtesy of staff, which is critical for athlete safety and confidence. Finally, Empathy involves providing personalized attention and understanding individual user needs, which is essential for emotional support (Sepdanius et al., 2024).

SERVQUAL's Applicability in Sports and the Malaysian Context

While SERVQUAL was originally developed for traditional corporate services, its application in sports settings requires critical evaluation. Unlike retail consumers, athletes are 'co-producers' of the sports service;

their satisfaction relies heavily on technical guidance, safety, and motivational support from staff. In the Southeast Asian and Malaysian context, recent studies emphasize the growing demand for high-quality sports infrastructure. For instance, Ain et al. (2023) highlighted the importance of risk management and perceived safety in Malaysian university sports facilities, while Nazarudin et al. (2023) found strong links between supportive training environments and athletes' mental well-being in Malaysia. However, these studies predominantly focus on collegiate or national levels, leaving state-level sports councils like MSNK underexplored.

METHODOLOGY

Research Design

This study uses a quantitative, cross-sectional research approach to examine satisfaction preferences among athletes registered with Majlis Sukan Negeri Kedah (MSNK). A survey method was employed to collect primary data, as it enables systematic measurement of perceptions and facilitates statistical analysis of relationships among variables. This approach is suitable for determining patterns and associations within a specific population at a single moment in time, thereby supporting the study's objective of determining satisfaction priorities in the MSNK gymnasium context

Population and Sampling of the Study

This research is using the purposive sampling technique which the sample selected athletes from different type of sports that use gymnasium service at Majlis Sukan Negeri Kedah (MSNK). The sample size was determined based on Yamane's (1967) formula with a population of 60 and a 5% margin of error, the calculated sample size was 52 respondents ($n = 60 / [1+60(0.05)^2] = 52.17 = 52$). The respondent were selected from four different types of sports which are athletic sports, cycling, rugby, and pencak silat. The data were collected using two questionnaires: the SERVQUAL Model, which measures perceived service quality. This scale assesses five elements of service quality: tangible (4 items), reliability (5 items), responsiveness (4 items), assurance (4 items), and empathy (5 items). The second questionnaire is athlete satisfaction questionnaire.

Research Instruments

This study utilized a structured questionnaire divided into three main sections. Section A gathered demographic information, requiring respondents to provide personal data such as age, gender, and sport discipline. The Likert Scale Questions (LSQ) were used in Section B. Section B is based on the SERVQUAL model developed by Parasuraman et al. (1988), which includes the characteristics of tangible, reliability, responsiveness, assurance, and empathy. Section C is related to the athlete satisfaction questionnaire by Ain et al. (2023) have been utilized to measure the athlete satisfaction on service quality in gymnasium.

Table 1:

Section	Instrumentation	Purpose
Section A	Demographic	To collect respondents' background information such as age, gender, and type of sport, this help in categorizing participants and analysing variations among groups.
Section B	SERVQUAL Model	To measure service quality in gymnasium facilities at Majlis Sukan Negeri Kedah (MSNK)
Section C	Athlete Satisfaction	To assess athlete satisfaction with service quality in gymnasium facilities at Majlis Sukan Negeri Kedah (MSNK)

RESULTS

Table 2, 3, and 4 present the frequency of age, gender, and the types of sports that participate in this study. Table 2 shows the age distribution of the athletes ranged from 13 to 22 years old. The highest frequency was at age 20 with 17 respondents (32.7%), followed by age 19 with 13 respondents (25.0%), and age 18 with 12 respondents (23.1%). The remaining age groups had smaller representations, 17 years old (5.8%), 14 and 15 years old (3.8%), and ages 13, 16 and 22 (1.9% each). This indicates that most athletes are in the 18-20 years age range, showing a concentration of participant among late teenagers and young adults.

Table 2: Frequency of Age for Total Respondent

Demographic Variable		Frequency	Percent
Age	13	1	1.9
	14	2	3.8
	15	2	3.8
	16	1	1.9
	17	3	5.8
	18	12	23.1
	19	13	25.0
	20	17	32.7
	22	1	1.9
	Total (n)	52	100.0

Table 3 shows the respondents were nearly evenly distributed, with 27 male athletes (51.9%) and 25 female athletes (48.1%). This suggests a balanced representation among the study participants.

Table 3: Frequency of Gender for Total Respondent

Demographic Variable		Frequency	Percent
Gender	Male	27	51.9
	Female	25	48.1
	Total	52	100.0

Table 4 shows that the athletes in this study were equally distributed across four sports. Each sport which is cycling, rugby, athletics, and pencak silat has 13 participants (25%). This equal representation ensures fair comparison between sports.

Table 4: Frequency of Types of Sports for Total Respondent

Type of Sport	Frequency	Percent
Cycling	13	25.0

Rugby	13	25.0
Athletic	13	25.0
Pencak Silat	13	25.0
Total	52	100.0

By ensuring that each sport is equally represented, the study is better positioned to make fair and reliable comparisons across different sports. Furthermore, this equal representation enhances the validity of any observed differences or similarities, as they are less likely to be influenced by disproportionate sample sizes. It also allows for a more comprehensive analysis of trends and patterns within and between sports, strengthening the overall robustness of the study findings.

Table 5: Descriptive Statistics Level of Athlete Satisfaction

	N	Minimum	Maximum	Mean	Std. Deviation
Athlete Satisfaction	52	4.25	5.00	4.6933	.18123
Valid N (listwise)	52				

Table 5 shows that the descriptive statistics for athlete satisfaction (N = 52) reveal a mean score of 4.6933 (SD = 0.18123), with a minimum of 4.25 and a maximum of 5.00. This high score suggests that, on average, athletes strongly agreed with statements related to their satisfaction, indicating a high level of satisfaction with the services provided by gymnasium MSNK. Overall, the data suggests that athlete satisfaction was consistently high, with most athletes reporting positive experiences.

Table 6: Descriptive Statistics of Perceived Service Quality

	N	Minimum	Maximum	Mean	Std. Deviation
Tangibles	52	4.00	5.00	4.6250	.32275
Reliability	52	3.60	5.00	4.4269	.36735
Responsiveness	52	4.25	5.00	4.6587	.22703
Assurance	52	3.25	5.00	4.4279	.42397
Empathy	52	4.00	5.00	4.6923	.28687
Valid N (listwise)	52				

Table 6 presents the descriptive statistics for the five dimensions of service quality as perceived by athletes in MSNK. Overall, the results show high levels of agreement with positive statements regarding service quality. The empathy dimension recorded the highest mean score of (M= 4.6923, SD = 0.28687), indicating that athletes felt they received personal attention and genuine care from the staff. Responsiveness followed closely with a mean of (M= 4.6587, SD= 0.22703), showing that athletes strongly agreed that staff were prompt, helpful, and willing to respond to their needs. Tangibles, which refer to the physical facilities and appearance of staff, had a mean of 4.6250 (SD = 0.32275), suggesting that the athletes were also satisfied with the physical aspects of the service environment. The dimensions of assurance (M = 4.4279, SD = 0.42397) and reliability (M = 4.4269, SD = 0.36735) both had slightly lower but still high mean scores, reflecting athletes' general confidence in staff abilities and the consistency of the services provided. The relatively low standard

deviations across all dimensions indicate low variability, meaning that most participants shared similar positive perception. To conclude, the findings suggest that athletes perceived overall service quality in MSNK to be very high and consistent across all five SERVQUAL dimensions.

Table 7: Correlation between Perceived Service Quality and Athlete Satisfaction

			Athlete Satisfaction	Tangibles	Reliability	Responsiveness	Assurance	Empathy
Spearman's rho	Athlete Satisfaction	Correlation Coefficient	1.000					
		Sig. (2-tailed)	.					
		N	52					
	Tangibles	Correlation Coefficient	.296*	1.000				
		Sig. (2-tailed)	.033	.				
		N	52	52				
	Reliability	Correlation Coefficient	.233	.309*	1.000			
		Sig. (2-tailed)	.097	.026	.			
		N	52	52	52			
	Responsiveness	Correlation Coefficient	.353*	-.099	-.027	1.000		
		Sig. (2-tailed)	.010	.483	.847	.		
		N	52	52	52	52		
	Assurance	Correlation Coefficient	.428**	.370**	.625**	.069	1.000	
		Sig. (2-tailed)	.002	.007	.000	.629	.	
		N	52	52	52	52	52	
	Empathy	Correlation Coefficient	.385**	.258	.219	.054	.296*	1.000
		Sig. (2-tailed)	.005	.064	.119	.704	.033	.
		N	52	52	52	52	52	52

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 7 demonstrates that four out of five SERVQUAL dimensions have a significant positive relationship with athlete satisfaction at Majlis Sukan Negeri Kedah (MSNK). The strongest relationship was found with the Assurance dimensions ($r = .428$, $p = .002$), indicating a moderate and statistically significant correlation. This suggests that athletes tend to be more satisfied when they feel confident in the abilities, courtesy, and professionalism of the gymnasium staff. The next strongest relationship was observed in Empathy ($r = .385$, p

= .005) and Responsiveness ($r = .353$, $p = .010$), both showing low but significant correlation. These findings imply that staff attentiveness and their willingness to help also contribute positively to athlete satisfaction. Tangibles ($r = .296$, $p = .033$) also had a low yet significant positive correlation, showing that the physical environment such as equipment and cleanliness, affects satisfaction to some degree. In contrast, the reliability dimension ($r = .233$, $p = .097$) showed a low and non-significant relationship, indicating that consistency and dependability of services may not strongly influence athlete satisfaction in this context. Overall, this analysis highlights that assurance, empathy, responsiveness, and tangibles are meaningful contributors to athlete satisfaction in MSNK.

DISCUSSION

The findings indicate that perceived service quality has a significant relationship with athlete satisfaction at MSNK, with varying strengths across SERVQUAL dimensions. Among these, the strongest relationship was found with the assurance dimensions ($r = .428$, $p = .002$), signifying a moderate and statistically significant correlation. This suggests that athletes place considerable importance on the competence professionalism, and reliability of gym staff and management, which directly influence their trust and confidence in the facility. In high-performance environments such as MSNK, athletes value staff who can provide accurate guidance, ensure safety during training, and demonstrate expertise in handling equipment and athlete needs. These attributes foster a sense of trust and credibility, thereby enhancing overall satisfaction. This finding aligns with previous studies emphasizes that quality assurance in sports training must be systematically evaluated through internal and external mechanism (Suharjo et al., 2018). Empathy ($r = .385$, $p = .005$) is second strongest of the dimensions that influence the athlete satisfaction. This highlights the importance of personalized care and attention from coaches and staff in shaping athletes' experiences. When service providers demonstrate genuine concern for athletes' needs, listen attentively, and offer tailored guidance, athletes perceive higher service quality.

This finding is reinforced by Rifki et al. (2025), who demonstrated that exercise behaviour strongly predicts empathy among sports participants. Together, these findings show that empathic interactions, whether through staff guidance or athletes' own behaviours, play an important role in shaping satisfaction and maintaining a supportive gym environment. Responsiveness dimensions demonstrated a weaker but significant relationship with athlete satisfaction ($r = .353$, $p = .010$). This suggests that while athletes appreciate timely assistant and prompt service, responsiveness alone does not carry the same weight as assurance and empathy. Responsiveness is often regarded as a baseline expectation rather than a distinctive driver of satisfaction. Athletes tend to prioritize the depth and accuracy of guidance over speed, and long-term satisfaction is shaped more by trust and emotional connection than immediate service delivery. Thus, responsiveness contributes to convenience but lacks the deeper impact provided by assurance and empathy. Similarly, tangibles showed a weak yet significant relationship with athlete satisfaction ($r = .296$, $p = .033$). This suggests that while the physical environment such as facilities, equipment, and cleanliness do contribute to athletes' comfort and safety, its influence is comparatively limited. Athletes often perceive well-maintained facilities as a baseline expectation rather than a distinctive factor that enhance satisfaction. In contrast, interpersonal dimensions such as assurance and empathy carry greater weight, as they directly shape trust, confidence, and emotional connection.

Thus, tangibles provide necessary support for training but are overshadowed by human interaction in determining overall satisfaction. Reliability showed a weak and non-significant relationship with athlete satisfaction ($r = .233$, $p = .097$). This indicates that consistency and dependability of service did not strongly influence athletes' satisfaction in the MSNK gymnasium context. One possible explanation is that athletes may take reliability for granted as a basic expectation such as sessions starting on time or services being delivered consistently rather than viewing it as a factor that enhances satisfaction. In high-performance environments, athletes appear to place greater emphasis on assurance, empathy, and responsiveness, which directly influence their trust and confidence in the facility.

LIMITATION OF STUDY

Despite the valuable insights gained regarding the relationship between service quality and athlete satisfaction at the Majlis Sukan Negeri Kedah (MSNK) gymnasium, several limitations must be acknowledged to provide context for the findings and guide future research. First, the study employed a quantitative, cross-sectional research design, meaning that data were collected at a single point in time. Consequently, this design restricts the ability to establish definitive causal inferences between the SERVQUAL dimensions and athlete satisfaction over extended periods. Athlete satisfaction and perceptions of service quality may fluctuate depending on different phases of their training macrocycle, competition seasons, or changing physiological needs. A longitudinal approach in future studies would be highly beneficial to track these variations over time.

Second, while the sample size of 52 state-level athletes was statistically adequate and representative for the specific population of MSNK gymnasium active users based on Yamane's formula, the relatively small absolute number of participants limits the broader generalizability of the findings. Furthermore, the sampling was restricted to athletes from only four specific sports disciplines: rugby, cycling, athletics, and pencak silat. Athletes from other disciplines, such as aquatics, racquet sports, or precision sports, may have entirely different facility requirements and service quality expectations. Additionally, because the context is strictly confined to state-level athletes in Kedah, the results may not accurately reflect the experiences of national-level athletes or those training in other state sports councils across Malaysia, which may possess different funding structures and facility standards.

CONCLUSION

In summary, this study used the SERVQUAL model to investigate how service quality affects athlete satisfaction at Majlis Sukan Negeri Kedah (MSNK). The results indicated that overall athlete satisfaction was elevated, with significant positive correlations found between athlete satisfaction and four of the five characteristics of service quality: assurance, empathy, responsiveness, and tangibles. Assurance appeared as the greatest factor, highlighting the need of staff professionalism and expertise. Despite reliability showing a low and non-significant correlation, this may be attributed to consistently satisfactory service delivery that reduced its perceived impact. The study highlights the importance for MSNK and similar sports organisations to prioritise the enhancement of service quality, especially in domains involving interaction with athletes to cultivate a more positive and inspiring atmosphere. By focussing on these key areas, organisations may enhance athlete experiences, improve performance, and foster sustained participation in sports programs. The research provides significant insights for sports management practices and establishes a basis for future studies on athlete satisfaction within Malaysian sports institutions.

Conflict Of Interest Statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. This research was conducted in the absence of any commercial, financial, or personal conflicts, and the authors declare the absence of conflicting interests with any affiliated organizations or funders.

Authors' Contributions

The authors declare the following role in the research: Muhammad Farid Hilmi Aidit was responsible for the study design, data collection, and analysis. Megat Mohd Alif Mifzal Rosli contributed to the interpretation of findings and drafting of the manuscript. Nurhanis Abdullah Sani contributed to manuscript review and editing, language refinement, and validation of the final version. All authors critically reviewed the work and approved the final version for submission.

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