

## Article

# How Does Service Quality Improve Consumer Loyalty in Sports Fitness Centers? The Moderating Role of Sport Involvement

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**Abstract:** In the context of sports fitness centers, understanding the relationship between service quality and customer experience is crucial for enhancing customer loyalty and building long-term relationships. This study aims to explore the impact of service quality factors on customer satisfaction, trust, commitment, and loyalty, with a specific focus on the moderating role of sport involvement in shaping consumer experiences and perceptions. For this purpose, a cross-sectional survey was conducted with 606 consumers of sports fitness centers in Zhengzhou, China. The results of a latent moderated structural equation (LMS) analysis via Mplus version 8 indicate a positive relationship between tangibility, reliability, responsiveness, assurance, and empathy with customer satisfaction in sports fitness centers. Additionally, customer satisfaction positively affects trust and customer commitment, which in turn positively affect loyalty. Furthermore, sport involvement moderates the effects of reliability, responsiveness, assurance, and empathy on satisfaction. Finally, trust and commitment mediate the relationship between satisfaction and loyalty. The present study has theoretical implications through illuminating the process mechanism of the effect of service quality on consumer loyalty, and it empirically shows different patterns of consumer experiences depending on sport involvement. Additionally, the results provide practical implications for developing effective service quality in sports fitness centers.

**Keywords:** service quality; customer satisfaction; trust; customer commitment; loyalty; sport involvement



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## 1. Introduction

At present, the pursuit of a healthy lifestyle is a popular topic worldwide. Due to the development of scientific technology and urbanization, sedentary lifestyles are increasing and physical activity is decreasing [1]; thus, the prevalence of lifestyle diseases such as obesity, type II diabetes, and fatty liver is increasing as well [2]. Physical activity plays a pivotal role in preventing such diseases, and it is substantially related to health and quality of life [3]. In this regard, health care via physical activity is receiving increasingly more attention [4]. This trend has contributed to the growth and expansion of the sports fitness industry, as evidenced by the yearly increase in the number of sports centers [5,6].

According to a global fitness industry statistics report [7], the number of sports center members increased by 37.1% between 2008 and 2018, and the number of sports centers was estimated to be more than 205,000 in 2019. The global fitness industry, which has an annual growth rate of 8.7%, has become one of the fastest growing industries worldwide [7]. To stand out in the sports fitness center market, which has experienced accelerated competition, adopting sustainable marketing strategies is necessary [8,9].

Sustainable marketing is a marketing concept and practice aimed at meeting customer needs while simultaneously safeguarding the welfare of society and the natural environment, fostering long-term and sustainable relationships [10]. In the field of marketing, it places significant emphasis on relationship sustainability, achieved through establishing enduring, stable customer connections to facilitate the enterprise's sustainable growth,

rather than merely prioritizing short-term sales and transactions [11]. Nurturing customer loyalty to the business is recognized as a pivotal strategy in sustainable marketing [12]. The benefits of customer loyalty are reciprocal: for businesses, loyal customers provide a stable income source and act as loyal advocates, recommending the company's services to others and enhancing positive word-of-mouth and brand reputation [13]; for individual customers, loyalty can help mitigate risks, reduce switching costs, and save resources [14]. Therefore, focusing on sustainable marketing strategies aimed at establishing customer loyalty is crucial for both businesses and customers [15]. In this regard, the concept of service quality [16] provides meaningful insights for enhancing customer loyalty and implementing successful sustainable marketing strategies in sports fitness centers.

Regarding service quality, existing studies have generally applied the SERVQUAL model of Parasuraman, Zeithaml and Berry [16]. This model defines service quality as the overall attitude and evaluation related to the service excellence perceived by customers who have experienced specific services. Specifically, service quality is conceptualized into five areas: tangibility, reliability, responsiveness, assurance, and empathy. The SERVQUAL model has been applied in sports management, and existing studies have reported that service quality affects customer satisfaction in sports centers and various consumer behaviors [17].

Some existing studies conceptualize the concept of service quality as a single factor [18,19]; thus, there are limits to identifying how sub-factors constituting service quality affect consumer behavior. The present study sets the concept of service quality as a multidimensional factor rather than a single second-order factor in order to pinpoint the specific effect of each sub-factor on satisfaction in the context of fitness centers. In addition, although previous studies on the service industry reveal that service quality not only directly enhances consumer satisfaction and also increases consumer loyalty [20–22], there is limited research on the specific influence process or psychological mechanism of service quality's effect on sports center consumer behavior. Furthermore, most existing studies regard consumers as a homogeneous group in the identification of the service quality's effect on consumer behavior [9].

However, consumers have various personal characteristics. Since consumers show different patterns in decision making and consumption behavior based on these characteristics (e.g., involvement), it is necessary to verify the research model that reflects this. Involvement is generally defined as an individual's interest in a target object or as the perceived centrality of a target object to their ego structure [23]. It is recognized as a variable that can represent consumer characteristics [24] and provide the basis for service market segmentation. While the existing literature identifies market segmentation as being critical to the successful development of management strategies, it mainly focuses on socio-demographic (e.g., age, gender, income, etc.) or psychographic variables [25]. From this perspective, the authors suggest that sport involvement modulates the effect of service quality on consumer experiences. To overcome the limitations of the previous studies, this study verifies how sub-factors of sports centers' service quality affect consumer loyalty, and it examines how these influences vary based on consumers' individual characteristics [2].

Against the backdrop of the aforementioned studies, this study seeks to expand the extant conceptual model of service quality marketing and shed light on the process through which service quality marketing affects consumers' experience and loyalty. In so doing, we apply the service quality model to sports fitness centers, conceptualize the five factors of service quality in this context, and elucidate how these different factors of service quality have varying effects on consumer satisfaction. Furthermore, we identify the mediating role of trust and consumer commitment in the relationship between consumer satisfaction and loyalty, thus advancing the understanding of the underlying mechanisms of service quality marketing in fostering loyalty in sports centers. Lastly, we provide detailed guidance for the effective implementation of service quality marketing in sports centers, which can be applicable to both highly involved and less involved customers.

## 2. Theoretical Background and Hypotheses Development

In light of the increasing demand for sports-related services, the profile of sports service customers has garnered attention [26]. The impacts of service quality, customer satisfaction, consumer experience, and loyalty have been highly regarded [27]. Therefore, in the context of the sports fitness center service market, it is crucial to conceptualize service quality and develop a predictive model for customer loyalty, simultaneously exploring the influence of various consumer characteristics, as this endeavor is vital for both attracting and retaining customers and ensuring the long-term sustainability of the enterprise.

### 2.1. The Factors of Service Quality in Sports Centers

Service quality is a key concept for a company to secure a competitive advantage. Several existing studies have verified the concept of service quality and its effects [28]. According to the service quality theory suggested by Parasuraman et al., service quality is a long-term and overall evaluation concept that compares the services expected by the customer with the services experienced [16]. The services perceived by customers have five sub-factors: tangibility, reliability, responsiveness, assurance, and empathy.

Based on this conceptualization, this study operationalizes sports centers' service quality with users' subjective attitudes and evaluations regarding the tangibility, reliability, responsiveness, assurance, and empathy of the services provided. Tangibility refers to the consumer's evaluation of the appearance of the physical facilities, equipment, personnel, and communication tools. For instance, the user's perception of the spatial environment, exercise equipment or facilities, and appearance of the sports center employees constitutes the tangibility of the corresponding sports center. Reliability is the service provider's ability to precisely provide the promised services. It involves the customer's evaluation of whether a scheduled program is conducted on time and whether the refund system is clear. Responsiveness refers to the attitude of a service provider in helping customers or the ability to act promptly and proactively in response to services requested by customers. It includes the consumer's perception of whether the information about progress is accurately conveyed while responding appropriately to the customer's request. Assurance is the ability to convey the service provider's knowledge, manners, attitudes, stability, and trust to the customers. It includes the customer's evaluation of the professionalism or knowledge of the sports center instructors, as well as the kindness and manners of the staff. Finally, empathy is a concept regarding the individual consideration or interest that the service provider gives to the customer and their communication with the customer. It is related to the customer's perception of whether the customer's circumstances are considered, whether the sports center operators express interest in the customer's personal matters, and whether customers can change the times for their convenience.

### 2.2. The Relationship between Service Quality and Customer Satisfaction

Customer satisfaction refers to the pleasure and satisfaction felt by customers when subjectively evaluating services. It involves comparing the expectations before the services and the evaluation of the service performance following the services [29]. Customer satisfaction is important for marketing managers because it affects the behavior of other consumers; satisfaction changes the consumers' attitudes, repurchase intentions, and complaints [30]. We focus on the definition of customer satisfaction presented by Mano and Oliver [31] and operationalize the definition as customers' overall satisfaction with sports centers, their satisfaction with exercise facilities and services, and the satisfaction of customer expectations.

Existing studies reveal that overall service quality has a positive and significant effect on customer satisfaction. Olorunniwo et al. set the service quality in the hotel industry as the second-order construct through the structural equation model and reported that service quality significantly affects overall satisfaction [32]. The five factors of the SERVQUAL are crucial for service businesses to build their organizational strategies, and all five significantly affect customer satisfaction [17]. In addition, the sub-factors of service quality have a

positive effect on consumer satisfaction. According to Jabnoun and Tamimi, when tangible quality factors—such as location and accessibility—and employee appearance are perceived positively, customers' overall satisfaction with the bank increases [33]. Meesala and Paul report that the reliability of hospitals to handle customer service issues, provide timely service, and maintain errorless records has a positive effect on customer satisfaction [34]. Furthermore, Othman et al. show that, in the travel industry, as customers desire quick services to save time, satisfying expectations is important because it influences customer satisfaction [35]. Lee et al. mention that for male customers at golf courses, the assurance of service quality—such as with the instructor's skills, knowledge, and professionalism—affect the trust and psychological satisfaction of the customers [36]. Moreover, Hsueh and Su conceptualize empathy as building an emotional relationship with customers, and they emphasize that higher empathy based on heartfelt attitudes and manners (rather than the provision of mechanical services) can satisfy customers [37]. Based on previous studies, we assume that the various levels of a sports center's service quality have a positive effect on the satisfaction of customers using the sports center. Therefore, the following hypotheses are developed:

**Hypothesis 1.** *The tangibility of sports center service quality has a positive effect on customer satisfaction.*

**Hypothesis 2.** *The reliability of sports center service quality has a positive effect on customer satisfaction.*

**Hypothesis 3.** *The responsiveness of sports center service quality has a positive effect on customer satisfaction.*

**Hypothesis 4.** *The assurance of sports center service quality has a positive effect on customer satisfaction.*

**Hypothesis 5.** *The empathy of sports center service quality has a positive effect on customer satisfaction.*

### 2.3. The Role of Sport Involvement as a Consumer Characteristic

Consumers are a heterogeneous group with varying personal characteristics. Since consumption behaviors vary according to these individual characteristics, consumers should be considered as heterogeneous rather than homogeneous. In addition, there are various variables that can differentiate consumers (i.e., motivation [38], identification [39], attachment [40], etc.). Since involvement helps identify the degree of the relationship between the subject and the individual, it is considered a key concept in the fields of consumer behavior and sport management [41]. In addition, involvement is a key factor in changing consumers' information processing, judgment, and decision making (the elaboration likelihood model [42]).

In general, involvement is defined as the degree of interest in a specific subject or the degree of centrality that the subject occupies in an individual's ego structure [23]. The conceptual definition and level of involvement are utilized for market segmentation and the establishment of more effective marketing strategies. For example, research on various types of involvement has been conducted: issue involvement [43], product involvement in marketing [44,45], brand involvement [46], customer involvement [47], and purchase involvement [48]. In addition, studies on consumer behavior based on sport involvement in sport management (e.g., [49–53]) have been conducted in various ways.

Furthermore, exercise and sport are different concepts, although they are usually used interchangeably in academic and colloquial speech [54]. This study expresses involvement as sport involvement rather than exercise involvement for several reasons. First, from a definitional perspective, a sport is a physical activity that is governed by rules and involves competition with other people or oneself. In contrast, exercise is any physical activity that involves an exertion of sufficient intensity, duration, and frequency to achieve or maintain

fitness [55]. The scope of sport is relatively broader than that of exercise, which only focuses on personal training. Second, from a motivational perspective, sport participants are more motivated by intrinsic interest and competence, whereas exercise participants rate health and appearance concerns higher [56]. This is because interest/enjoyment and competence are considered as intrinsic motivations, while body-related concerns are extrinsic since the activity is somewhat motivated by external outcomes. In addition, in this study, the involvement of fitness center customers broadly refers to sport, not just to the importance of physical exercise or training to the consumers themselves. Accordingly, we believe that sport involvement is more in line with the context of this study.

According to the elaboration likelihood model (ELM), if the involvement level in the information processing target is high, the information is processed by the central route and is evaluated based on information directly related to the target [57]. If the involvement level is low, however, peripheral or superficial information clues that are not directly related to the subject have a greater influence on decision making [58]. When the principle of the ELM is applied, consumers with high involvement in sports are more interested in information directly related to the consumption target in the sports consumption process [58]. According to this principle, in previous studies on the service quality of sports centers that took service quality as an overall variable, consumers with high sports participation are more likely to be influenced by central cue factors (tangibility, reliability, responsiveness, assurance, and empathy) directly related to service quality. Compared to consumers with high involvement, consumers with low involvement are presumably more easily influenced by peripheral information clues (e.g., center reputation, public relations activities, word of mouth information, etc.).

Kim et al. found that, in the evaluation of volunteer activity experience, involvement in mega sports event volunteer activities has different moderating effects between general needs satisfaction and the volunteer management practices of volunteers on overall volunteer satisfaction [59]. Specifically, they found that volunteer activity involvement does not moderate the effect of general needs satisfaction (central needs) on overall volunteer work satisfaction. Furthermore, they found that it negatively controls the effect of volunteer management practices satisfaction (peripheral needs) on overall volunteer work satisfaction. The result of this moderating effect is thought to be due to the level of individual volunteer involvement in specific targets (i.e., volunteer work) changing the formation of volunteers' attitudes, evaluations, and decision making. Furthermore, Sivakumar and Srinivasan evaluated hospital service experiences and found that the five sub-factors of service quality have different impacts on customer satisfaction depending on customers' involvement level (high/low) [60]. Specifically, they found that the impacts of tangibility and reliability on customer satisfaction are greater in the customer group with low involvement than in the group with high involvement. As for responsiveness, assurance, and empathy, they found that the moderating effect of involvement is not statistically significant for satisfaction; thus, the factors are equally important for groups with low and high involvement. Based on these previous research results, we speculate that the personal characteristics of the consumers (i.e., involvement) will not only change the relationship between overall service quality and customer satisfaction but also the relationship between the five factors of service quality and consumer satisfaction.

Specifically, physical facilities and equipment, staff and communication tools, and tidiness and cleanliness (i.e., tangibility) are important; they are the most basic factors for the customers of a sports center and are regarded as the most fundamental determinants of customer satisfaction [61]. Furthermore, Senić and Marinković point out that the significance of tangibility is greater for services that have more physical components (e.g., fitness center, polyclinic) and plays a greater role in evaluating service quality [62]. Therefore, when evaluating fitness center service quality, we speculate that the effect of tangibility on satisfaction will not vary with the level of consumers' sport involvement.

Regarding reliability, Sivakumar and Srinivasan affirmed that the service provider's ability to provide the service as promised (i.e., reliability) is more important for consumers

with low involvement (consumers with less experience); when exposed to better reliability factors representing service quality, they tend to display a more positive attitude and response than consumers with high involvement [60]. This is because consumers with low involvement are relatively sensitive to perceived risk factors due to their relatively insufficient knowledge and ability to process information, while reliability can reduce the consumers' perception of risk and have a positive impact on subsequent consumer decision-making behavior [63]. In a similar vein, assurance relates to competence, respectfulness, confidence, and safety [60] in sports center service, which is a way to address consumers' fears and concerns and can establish a level of trust between consumers and the service provider. For example, the high-level technical guidance ability and professionalism of fitness coaches can bring more psychological security and satisfaction to consumers with low involvement than to consumers with high involvement (i.e., consumers with extensive sports experience) [36]. This is because consumers with high sport involvement are more likely to engage in thoughtful analysis by themselves in order to reduce feelings of risk (related to unprofessional coaching action guidance or unreliable trading channels) [64]. In contrast, less involved consumers lack the ability and motivation to search for information, or they put in less effort to process information by themselves, and thus rely more on the coaching or course provided by the sports center [22]. Therefore, we speculate that less involved consumers tend to give more value to the assurance service provided by sports centers than highly involved consumers and are more likely to attain a positive affective attitude such as satisfaction in this way.

Compared to tangibility, reliability, and assurance, responsiveness and empathy tend to focus more on action and emotional interactions between service providers and customers. Typically, consumers with high levels of sport involvement have more relevant experience, knowledge, and expertise than those with low levels of involvement [55]. Bell et al. found that consumers with less experience and low expertise (i.e., less involved consumers) face difficulty when assessing intangible service quality and must rely on the relational and tangible cues characteristic of the functional aspects of the service (e.g., ancillary equipment for providing timely service and product review message boards, etc.) [65]. In other words, the relative importance of functional service quality factors (e.g., change and refund systems and staff expertise) to consumer assessments is likely to decline as consumers become highly involved. Highly involved consumers likely see past the functional layers of the service offering to focus their assessment more on the in-depth service factors (e.g., the service provider's timely and precise service delivery, empathy, and friendliness). For these reasons, it is expected that sports center consumers' sport involvement will determine the effects of the responsiveness and empathy of service quality on consumer satisfaction with sports fitness centers. All in all, the following hypotheses are suggested:

**Hypothesis 6.** *The impact of tangibility on customer satisfaction does not vary depending on the level of sport involvement.*

**Hypothesis 7.** *The level of sport involvement negatively moderates the impact of reliability on customer satisfaction.*

**Hypothesis 8.** *The level of sport involvement positively moderates the impact of responsiveness on customer satisfaction.*

**Hypothesis 9.** *The level of sport involvement negatively moderates the impact of assurance on customer satisfaction.*

**Hypothesis 10.** *The level of sport involvement positively moderates the impact of empathy on customer satisfaction.*

#### 2.4. Psychological Mechanisms for the Effect of Customer Satisfaction on Loyalty: Trust and Customer Commitment

Trust is defined as the willingness of trading partners to confidently be mutually dependent, and it refers to the perceived authenticity and favoritism in the relationship with exchange partners [66]. In this study, the operational definition of trust is the customer's evaluation level regarding the trustworthy feeling that sports center customers can have for their sports centers, the honesty of the sports centers, and their will to keep their promises.

Satisfaction is a prerequisite for trust [67] and is formed in the early stages of a relationship, but trust is formed in the middle of the relationship [68]. The realization of customer satisfaction via the provision of high service quality is identified as an important factor in determining customer trust. Fornell found that customer satisfaction has a positive effect on the customer's trust and attachment to the service provider over time during the service process [69]. Considering that previous studies indicated that customer satisfaction through the provision of higher service quality leads to higher trust in service providers [70], the following hypothesis was established:

**Hypothesis 11.** *Customer satisfaction will have a positive effect on trust.*

Meanwhile, Efi and Anastasia stated that achieving customer satisfaction in sports centers promoted psychological immersion, which is the will to continue using the service and to exclude other alternatives [71]. In the service area, Moorman et al. defined customer commitment as a state of commitment to maintain a long-term and voluntary relationship [66], specifically including sub-factors such as affective commitment, calculative commitment, and normative commitment [72]. However, normative commitment is a sense of moral obligation in a business relationship, and it refers to the intrinsic value of corporate members to be loyal to the company and diligently fulfill their duties [72]. Therefore, since normative commitment is more suitable for the emotional connection between internal employees and the organization, this study judges this commitment to be inappropriate for the emotional connection between the customer and the sports center and thus excludes it. In addition, Coleman et al. pointed out that there was a strong statistical correlation between normative and affective commitment in general [73]. Therefore, to specifically measure the concept of customer commitment based on the attitude and behavior of sports center customers, this study conceptualizes customer commitment as two sub-dimensions: affective commitment and calculative commitment. Affective commitment refers to the customer's preference, affinity, and attachment to the service provider, and calculative commitment refers to the prediction of the possible transaction costs or the will to maintain the relationship when alternatives are insufficient [72]. Accordingly, this study conceptualizes customer commitment as a sense of belonging, attachment, and cohesiveness to the sports center, the benefits they experience from the continuous use of the sports center, and the evaluation of damage and inconvenience in case of interruption.

Gustafsson et al. argued that customer satisfaction is an evaluation of past consumption experiences and emotional attitudes, and customer commitment is a desire for the future; they suggested satisfaction as an antecedent variable for customer commitment [74]. Furthermore, Cater and Zabkar reported, in their study on the antecedent and resultant factors of customer commitment in the service field, that customers' overall satisfaction increased affective commitment [75]. They explained that when customer satisfaction increased, the customer's will to maintain the relationship became stronger due to emotional causes (preference and identification). Furthermore, according to Petzer and Roberts-Lombard [76], calculative customer commitment consisted of comparing the benefits that customers received in an exchange relationship with service providers with the cost of maintaining the current relationship. When customers were satisfied with their relationships with the service providers, the state of commitment could be stronger. In summary, in this study, which treats customer commitment as one variable, it can be inferred that customer satisfaction can increase customer commitment. Therefore, we hypothesize:

**Hypothesis 12.** *Customer satisfaction will have a positive effect on customer commitment.*

Customer loyalty is regarded as a key factor in a firm's competitive advantage and in its survival and development [77]. The outcomes of securing customer loyalty include a decrease in consumer conversion costs, an increase in the sales success rate, and a decrease in publicity costs; from the consumer's perspective, the outcomes include saving time searching for information about a product, reducing price sensitivity, and avoiding risks of failure [78]. In particular, a high consumer repurchase intention means that they can become regular customers, enabling the creation of a basis for long-term demand, which is the ultimate goal of most business management [79]. Oliver argued that loyalty can be conceptualized as repurchasing and favorable word of mouth in consumer behavior and that, as customers have more trust in companies and their brands, they have repurchase intentions for products and services and favorable intentions to recommend to others [13]. In this study, the operational definition of loyalty is the level of intention to reuse the particular sports center and the intention to recommend it positively to others.

Customer trust is an important prerequisite for loyalty [80]. Ribbink et al. proved that the trust of both parties in the online shopping transaction process directly affects loyalty [81]. As for sports centers, Gecti and Zengin reported that customers' trust has a significant effect on attitude and behavioral loyalty [82].

Customer commitment is an important concept underlying loyalty [75]. Most researchers argue that customer commitment and loyalty are related to each other but that they are distinct concepts, suggesting that customer commitment is an antecedent of loyalty [83]. The difference between customer commitment and loyalty is that customer commitment is mainly cognitive and refers to the degree of attitude [83], whereas loyalty is a behavioral response that is a function of a psychological process [84]. Therefore, customer commitment mainly reflects the will and attitude to maintain a relationship, whereas loyalty is defined as repeated purchase and recommendation behaviors resulting from a mixture of attitudes and behaviors. Cater and Zabkar divided customer commitment into three sub-dimensions—*affective commitment, calculative commitment, and normative commitment*—and tested their relationships with loyalty, confirming that all three dimensions can increase loyalty [75]. Thus, we propose:

**Hypothesis 13.** *Trust will have a positive effect on customer loyalty.*

**Hypothesis 14.** *Customer commitment will have a positive effect on customer loyalty.*

Morgan and Hunt theorized that trust and customer commitment are crucial parameters in the relationship between customer satisfaction and loyalty in a successful exchange relationship [67]. In particular, in the relationship between customer satisfaction and loyalty, trust, and customer commitment are important factors in determining the relationship quality between a company and its customers [77]. Specifically, some researchers claimed that trust has a mediating effect on the relationship between customer satisfaction and loyalty [70,85]. According to Madjid, not only does customer satisfaction have a direct effect on customer loyalty, but personal trust in the other party also has a mediating effect between customer satisfaction and loyalty, despite potential risks [86]. Therefore, this study predicts that customers who are satisfied with the sports center they use would build trust and continue to use the sports center. In other words, trust serves to amplify the link between customer satisfaction and loyalty, turning satisfied customers into loyal customers.

In addition, according to Goo and Huang, relationship commitment is an important variable affecting the continuity of the relationship, and strong relationship commitment can reduce switching behavior and help build stable relationships [87]. Chen reported that the four variables of trust, customer commitment, involvement, and customer value have mediating effects on the relationship between customer satisfaction and loyalty in the e-service field [88]. The study of Javadein et al. on sports facility services shows that, in terms of the effect of customer satisfaction on customer loyalty, customer commitment as a behavioral response and trust as an attitude toward service providers both have

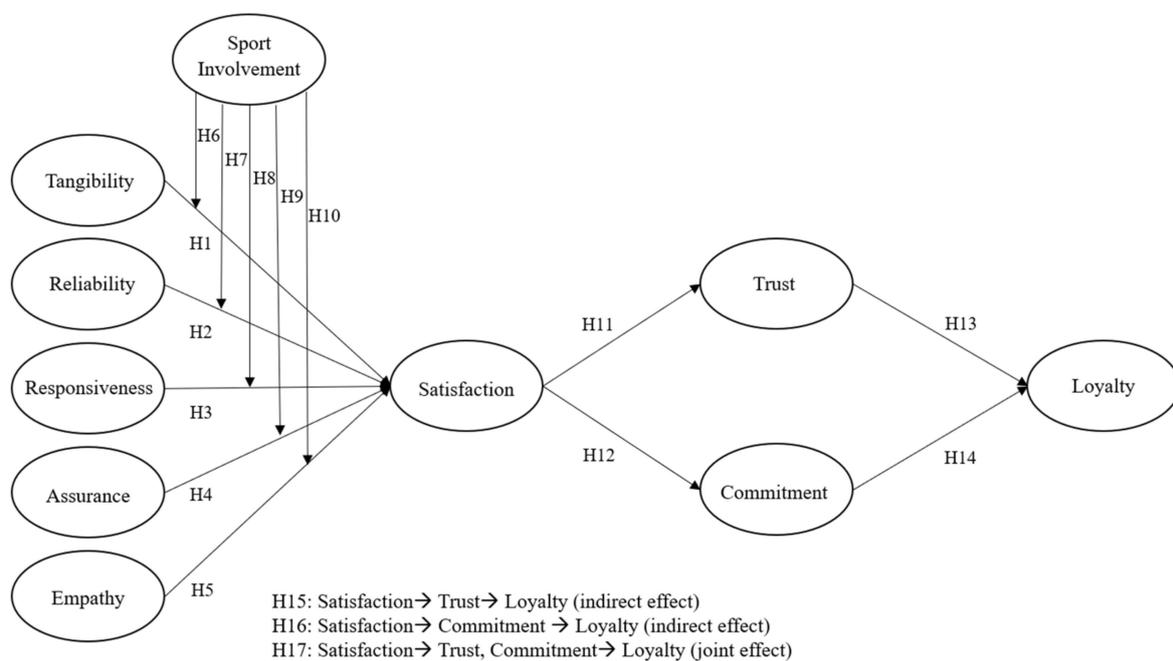
significant mediating effects [85]. Additionally, Agrawal et al. argued that customer loyalty is influenced by numerous mixed factors in specific contexts, and they confirmed that trust and commitment are key factors in fostering customer loyalty [89]. Hence, we hypothesize:

**Hypothesis 15.** *Sports center consumers' trust mediates the relationship between customer satisfaction and customer loyalty.*

**Hypothesis 16.** *Sports center consumers' commitment mediates the relationship between customer satisfaction and customer loyalty.*

**Hypothesis 17.** *Sports center consumers' trust and commitment jointly mediate the relationship between customer satisfaction and customer loyalty.*

Based on the hypotheses, we developed a conceptual research model that summarizes the hypothesized relationships (Figure 1).



**Figure 1.** Research model.

### 3. Methods

#### 3.1. Participants and Procedure

This study collected data based on a cross-sectional design and a combination of online and offline surveys targeting adults in their twenties or older living in Henan, China, who were using a sports center in 2020 as the population. Specifically, we developed a survey via the online survey platform wjx.cn, which offered participants a nominal payment and the chance to win a raffle prize. For the offline survey, questionnaires were distributed at multiple fitness centers in Henan Province, ensuring a representative sample of all sports fitness center consumers. All the offline survey questionnaires were collected on site, at the front desk of the fitness center, by a team of three experienced interviewers and one supervisor. This study combines online and offline surveys for several reasons. Firstly, it helps reduce errors arising from manual data recording and enhance the ease of quantification and statistical analysis by obtaining a larger sample size. This approach also facilitates faster questionnaire collection. Secondly, the use of both methods ensures that the research is not limited by location, enabling the inclusion of a more diverse and representative sample from Henan Province, which encompasses a vast area with numerous fitness centers.

By distributing 648 online and offline questionnaires, a total of 606 samples were used for analysis, excluding 42 copies that were either not collected or were treated as insufficient responses. Of the 606 participants, 59.6% were male. The average age of the participants was 35.24 years (minimum = 20; maximum = 60; SD = 9.73; SE = 0.395). In terms of education, 58 respondents (9.6%) had a high school degree or less, 360 (59.4%) had a college degree, and 188 (31.0%) had graduate-level study.

### 3.2. Instrument

For the response scale of the questionnaire items, a 7-point Likert scale was used, ranging from 1 point 'not at all' to 7 points 'strongly agree' for each question; the self-administration method was utilized to answer the questions. For the questionnaire on sports center service quality, this study modified and utilized 22 questions with the five sub-factors (tangibility, reliability, responsiveness, assurance, and empathy) presented by the tool for measuring service quality, SERVQUAL, used by Parasurama, Zeithaml, and Berry [12], to align with the purpose of this study. For customer satisfaction, based on the items of overall satisfaction evaluation suggested by Mano and Oliver [31], the questionnaire items utilized by Dagger and O'Brien were modified and supplemented in line with the purpose of this study, and consisted of five items [90]. For the scale of trust, based on the study of Mayer et al. [91], the questions on trust, utilized by Jarvenpaa et al. [92], were modified and supplemented based on the purpose of this study, and consisted of three items. For the scale of customer commitment, the questions that were developed by Allen and Meyer [93] and utilized by Jain et al. [94], Cater and Zabkar [75], and Gustafsson et al. [74] were modified and supplemented in line with the purpose of this study, and consisted of 10 items. For the scale of customer loyalty, reuse intention and word of mouth were conceptualized, and the questionnaire used by Jeon et al. [95] was modified and supplemented, and it consisted of six questions. For the scale of sport involvement, five questions regarding the involvement scale of Zaichkowsky [23] were modified and supplemented in line with this study.

Existing measurement items were translated into Chinese by a bilingual author, and the co-authors resolved the differences through discussion and consensus by comparing the items translated into Chinese with the existing items. We validated the scale's robustness via tests of invariance, dimensionality, reliability, and discriminant and nomological validity [96,97]. First, we compared the literal translation of the scale and the modified version of the scale by examining the means and standard deviations for the two versions of the questionnaire to assess the differences with regard to the skewness of the distribution. Next, we examined the internal structure via confirmatory factor analysis. Specifically, we evaluated the fit of the models as strong for the items based on most fit indices (see Section 4.1 for details). We assessed reliability using the average variance extracted (ranging from 0.540 to 0.719), and all the constructs demonstrated sufficient reliability. Then, we examined the nomological, convergent, and predictive validity of the literal and modified versions. Through this, the authors revised the translated version, secured the content equality of the questionnaires in the two languages, and confirmed the measurement items. Table 1 presents the existing measurement items.

**Table 1.** Summary results for confirmatory factor analysis (CFA).

Factors and Items	$\lambda$	C.R.	AVE
Tangibility		0.892	0.622
The spatial environment of my sports center is excellent.	0.844		
The facilities of my sports center are highly clean.	0.791		
The appearance of staff at my sports center is excellent.	0.779		
My sports center has the latest exercise equipment.	0.744		
The additional facilities of my sports center are excellent.	0.782		

Table 1. Cont.

Factors and Items	$\lambda$	C.R.	AVE
<b>Reliability</b>			
		0.927	0.719
My sports center provides services within the promised time.	0.849		
My sports center solves problems with products or services precisely in the case of problem occurrence.	0.832		
My sports center operates a clear and accurate change and refund system.	0.788		
My sports center provides the promised program.	0.859		
My sports center makes no mistakes in providing services.	0.908		
<b>Responsiveness</b>			
		0.897	0.635
My sports center responds immediately to customer needs.	0.837		
The staff of my sports center is friendly to customers.	0.834		
My sports center provides prompt services for visiting customers.	0.771		
The staff of my sports center is very willing to help me.	0.746		
The staff of my sports center provides services when I need them.	0.793		
<b>Assurance</b>			
		0.854	0.540
My sports center gives me a sense of confidence in the service.	0.824		
My sports center has the expertise to answer my questions.	0.704		
The instructors of my sports centers have the skills and knowledge.	0.671		
There is no risk of financial transactions when registering for my sports center.	0.740		
The staff of my sports center is polite.	0.726		
<b>Empathy</b>			
		0.899	0.641
The staff of my sports center takes care of each customer.	0.841		
My sports center sincerely cares about the interests of its customers.	0.790		
The staff of my sports center clearly understands the needs of the customer.	0.773		
My sports center sets up a class schedule convenient for customers.	0.763		
My sports center listens to the thoughts and opinions of its customers.	0.834		
<b>Customer Satisfaction</b>			
		0.908	0.665
I am generally satisfied with my sports center.	0.858		
I like the sports center I registered for.	0.826		
I am satisfied with the exercise facilities of my sports center.	0.823		
I am satisfied with the service of my sports center.	0.780		
My sports center exceeded my expectations.	0.789		
<b>Trust</b>			
		0.875	0.700
The sports center which I registered is reliable.	0.837		
The sports center which I registered is honest.	0.830		
The sports center which I registered always keeps its promises.	0.842		
<b>Commitment</b>			
		0.936	0.593
I feel a strong sense of belonging to my sports center.	0.790		
I have a strong attachment to my sports center.	0.788		
I consider my sports center as my family.	0.735		
I enjoy exercising at my sports center.	0.786		
I feel a sense of identity with my sports center.	0.806		
I think that I will be able to receive many benefits (profits) in the long run, if I continuously use my sports center.	0.787		
I think I lose more than I gain if I leave my sports center.	0.752		
It would be a loss if I moved to other sports centers.	0.751		
It would be very inconvenient if I left my sports center.	0.745		
If I deregister from my sports center, there may be losses.	0.754		
<b>Loyalty</b>			
		0.911	0.632
If I can afford it, I would like to continue using my sports center.	0.826		
It is highly likely for me to use the current sports center than other sports centers.	0.810		
I will continue to use my sports center even if the price goes up.	0.742		
I would like to highly recommend my sports center to people around me.	0.813		
I will tell others about my sports center positively.	0.807		
I will promote the advantages of the current sports center to the people around me.	0.768		
<b>Sport Involvement</b>			
		0.898	0.638
I have high attention to sports (exercise).	0.810		
Sports (exercise) are important to me.	0.811		
I am highly interested in sports (exercise).	0.819		
Sports (exercise) are of high value to me.	0.769		
Sports (exercise) have a lot to do with me.	0.783		

### 3.3. Data Analysis

To verify the assumption of data normality, a univariate normality test through the Kolmogorov–Smirnov test and the Shapiro–Wilk test, as well as Mardia’s multivariate normality test, were performed [98]. As a result, since the observed variable data in this study violated the multivariate normality distribution, the solution to the non-normal distribution suggested by Satorra and Bentler [99] was utilized (i.e., scaled chi-square [S-B  $\chi^2$ ] and robust standard errors). Confirmatory factor analysis (CFA) was performed using the Mplus program version 8 to verify the reliability and validity of the used measurement tool. Specifically, to confirm how well the model correlation matrix derived through the measurement model matched the sample correlation matrix, the fitness indices of the measurement model were confirmed:  $\chi^2$ (df,  $p < 0.001$ ), NC (normed  $\chi^2$ ), CFI (comparative fit index), TLI (Tucker–Lewis index), RMSEA (root mean square error of approximation), and SRMR (standardized root mean square residual). The reliability was judged through composite reliability (CR, [100,101]), and the convergent validity was judged through model fit, factor loading [102], CR, and the AVE (average variance extracted) of each construct [100]. The discriminant validity was judged by determining whether the AVE values exceeded the squared values of the correlations between the constructs [100].

To test the hypothesis, a latent moderated structural equation (LMS) analysis was performed using Mplus8. We chose the LMS analysis method instead of partial least squares structural equation modeling (PLS-SEM) for several reasons. First, the main purpose of this research is to test the structural model (psychological mechanism) explaining how consumers develop loyalty toward a sports center (model testing purpose) rather than explaining the variance of loyalty (prediction purpose). Therefore, we believe that covariance-based structural equation modeling seems to be a better option than partial least squares, which has prediction purposes [103]. Second, LMS is well-suited for examining interactions and moderating effects among latent variables in structural equation modeling [104,105], aligning with our objective to explore the moderating role of sport involvement in the relationship between service quality and customer outcomes. Third, with a relatively large sample size (606 valid cases in the current study) and complex relationships among the variables, LMS is better equipped to handle the demands of our study. It provides a more comprehensive explanation for the moderation of relationships, facilitating a deeper understanding of our research findings.

To evaluate the fit of the research model, this study utilized the two-step evaluation method suggested by Klein and Moosbrugger [106]. Based on the two-step evaluation method, this study estimated the model (model 0) excluding the interaction factors, and the evaluation was performed based on the existing fit index (normed chi-square value, CFI, RMSEA, and SRMR) in the first step. In the second step, it estimated the model (model 1) including latent interaction factors and performed the log-likelihood comparison test of model 0 and model 1 based on the calculation formula  $\{D = -2[(\log\text{-likelihood value of Model 0}) - (\log\text{-likelihood value of Model 1})]\}$  and the degree of freedom (df). Hypothesis testing was performed based on the path coefficient of the final model 1.

## 4. Results

### 4.1. Measurement Model Validation

CFA was conducted to confirm the fit index of the measurement model of this study; the fit of the established measurement model was found to be good (CFI = 0.932, TLI = 0.927, RMSEA = 0.042, SRMR = 0.032, and  $S\text{-}B\chi^2/\text{df}$  ( $2754.812/1332$ ) = 2.068,  $p < 0.01$ ) [107]. The factor loadings of all measurement items ranged from 0.671 to 0.908, indicating that all were higher than 0.50 and thus statistically significant. The AVE values of each construct ranged from 0.540 (assurance) to 0.719 (reliability), and CR appeared to range from 0.854 to 0.936 (Table 1); therefore, we concluded that reliability and convergent validity were established [100,108]. To test the discriminant validity, we compared the AVE values of each construct and the squared values of correlations between the constructs (Table 2). The results showed that the AVE values were found to be greater than the

squared values of correlations between the constructs (Table 2). Thus, we concluded that discriminant validity was also established [100,108].

**Table 2.** Summary results of measurement model validation.

	1	2	3	4	5	6	7	8	9	10
1 SQT	<b>0.622</b>	0.163 *	0.213 *	0.154 *	0.332 *	0.186 *	0.030 *	0.089 *	0.030 *	0.050 *
2 SQR	0.404	<b>0.719</b>	0.248 *	0.220 *	0.326 *	0.214 *	0.050 *	0.106 *	0.023 *	0.040 *
3 SQC	0.462	0.498	<b>0.635</b>	0.245 *	0.324 *	0.234 *	0.030 *	0.088 *	0.037 *	0.045 *
4 SQA	0.393	0.469	0.495	<b>0.540</b>	0.280 *	0.288 *	0.154 *	0.109 *	0.132 *	0.136 *
5 SQE	0.576	0.571	0.569	0.529	<b>0.641</b>	0.254 *	0.040 *	0.100 *	0.048 *	0.089 *
6 SAT	0.431	0.463	0.484	0.537	0.504	<b>0.665</b>	0.113 *	0.102 *	0.114 *	0.072 *
7 TR	0.172	0.223	0.173	0.392	0.201	0.336	<b>0.700</b>	0.056 *	0.245 *	0.147 *
8 COM	0.298	0.326	0.296	0.330	0.316	0.320	0.236	<b>0.593</b>	0.097 *	0.047 *
9 LOY	0.174	0.153	0.192	0.363	0.219	0.338	0.495	0.312	<b>0.632</b>	0.166 *
10 INV	0.224	0.200	0.213	0.369	0.298	0.269	0.383	0.217	0.407	<b>0.638</b>

Note: values \* = the squared values of the correlations between the constructs; bold = the AVE values; italicized = the correlations between the constructs; SQT = tangibility; SQR = reliability; SQC = responsiveness; SQA = assurance; SQE = empathy; SAT = satisfaction; TR = trust; COM = commitment; LOY = loyalty; INV = sport involvement.

#### 4.2. Hypothesis Testing

To verify the hypothesis established in this study, an LMS analysis was performed. Based on the two-step evaluation method suggested by Klein and Moosbrugger [106], this study estimated the structural model (model 0) excluding the latent interaction factors (tangibility  $\times$  sport involvement, reliability  $\times$  sport involvement, responsiveness  $\times$  sport involvement, assurance  $\times$  sport involvement, and empathy  $\times$  sport involvement) in the first phase. The goodness of fit of the set structural model appeared to be good (RMSEA = 0.044, CFI = 0.926, TLI = 0.921, SRMR = 0.068, and S-B  $\chi^2/df(2911.233/1352) = 2.153$ ,  $p < 0.001$ ). Therefore, in the second phase of the study, we estimated the structural model (model 1) including the latent interaction factors (tangibility  $\times$  sport involvement, reliability  $\times$  sport involvement, responsiveness  $\times$  sport involvement, assurance  $\times$  sport involvement, and empathy  $\times$  sport involvement) and performed the log-likelihood ratio test of model 0 and model 1 (log-likelihood ratio test: [104,106]). As a result, model 1 was found to be statistically better than model 0 ( $D = 2[|-42343.694| - |-42367.523|] = 46.587$ ,  $\Delta df = 5$ ). Therefore, in this study, we adopted model 1 including the latent interaction factors and tested the study hypotheses based on the path coefficient of model 1.

The result of verifying model 1 revealed that the tangibility ( $\beta = 0.119$ ,  $p < 0.01$ ), reliability ( $\beta = 0.115$ ,  $p < 0.05$ ), responsiveness ( $\beta = 0.153$ ,  $p < 0.01$ ), assurance ( $\beta = 0.310$ ,  $p < 0.001$ ), and empathy ( $\beta = 0.115$ ,  $p < 0.05$ ) of service quality had a statistically significant impact on customer satisfaction. Therefore, Hypotheses 1–5 were all supported.

Regarding the moderating effect of sport involvement, the interaction factors of tangibility and sport involvement did not have a statistically significant effect on customer satisfaction ( $\beta = -0.025$ ,  $p > 0.05$ ). Therefore, it cannot be said that sport involvement moderates the effect of tangibility on customer satisfaction. The effect of the interaction factors of reliability and sport involvement on customer satisfaction was found to be statistically significant ( $\beta = -0.100$ ,  $p < 0.05$ ). Therefore, sport involvement can be seen as negatively moderating the effect of reliability on customer satisfaction. The effect of the interaction factors of responsiveness and sport involvement on customer satisfaction was found to be statistically significant ( $\beta = 0.145$ ,  $p < 0.05$ ). In other words, sport involvement can be seen as positively controlling the effect of responsiveness on customer satisfaction. The effect of the interaction factors of assurance and sport involvement on customer satisfaction was found to be statistically significant ( $\beta = -0.111$ ,  $p < 0.05$ ). Therefore, sport involvement can be seen as negatively controlling the influence of assurance on customer satisfaction. Finally, the effect of the interaction factors of empathy and sport involvement on customer satisfaction was also found to be statistically significant ( $\beta = 0.194$ ,  $p < 0.05$ ). Therefore,

sport involvement can be seen as positively moderating the impact of empathy on customer satisfaction. Thus, except for hypothesis 6, all other hypotheses—7, 8, 9, and 10—were supported.

Meanwhile, the effects of customer satisfaction on trust ( $\beta = 0.372$ ,  $p < 0.001$ ) and customer commitment ( $\beta = 0.354$ ,  $p < 0.001$ ) were found to be statistically significant. Therefore, Hypotheses 11 and 12 were adopted. The effects of trust ( $\beta = 0.457$ ,  $p < 0.001$ ) and customer commitment ( $\beta = 0.217$ ,  $p < 0.001$ ) on loyalty were also found to be statistically significant. Therefore, Hypotheses 13 and 14 were adopted.

Finally, the direct effect of customer satisfaction on loyalty was statistically significant ( $\beta = 0.146$ ,  $p < 0.05$ ), and the indirect effect of customer satisfaction on loyalty through trust was found to be statistically significant (standardized effect = 0.139, 95% CI [0.083 to 0.207]). Therefore, hypothesis 15 was corroborated. The indirect effect of customer satisfaction on loyalty via customer commitment was found to be statistically significant (standardized effect = 0.058, 95% CI [0.027 to 0.095]). Therefore, hypothesis 16 was confirmed. Furthermore, the joint effect of trust and customer commitment on loyalty was found to be statistically significant (standardized effect = 0.343, 95% CI [0.231 to 0.449]). Therefore, hypothesis 17 was corroborated. In summary, trust and customer commitment were found to be partial mediators in the relationship between customer satisfaction and loyalty (Table 3). Additionally, we examined the joint effect of all independent variables (service quality, satisfaction, trust, and commitment) on the dependent variable (loyalty) to understand the relationships among our study variables, and the joint effect was found to be statistically significant (standardized effect = 0.163, 95% CI [0.150 to 0.335]). The result of the mediation effect can be found in Table 3, and the overall outcomes are presented in Table 4 and Figure 2.

**Table 3.** The result of the mediation effects.

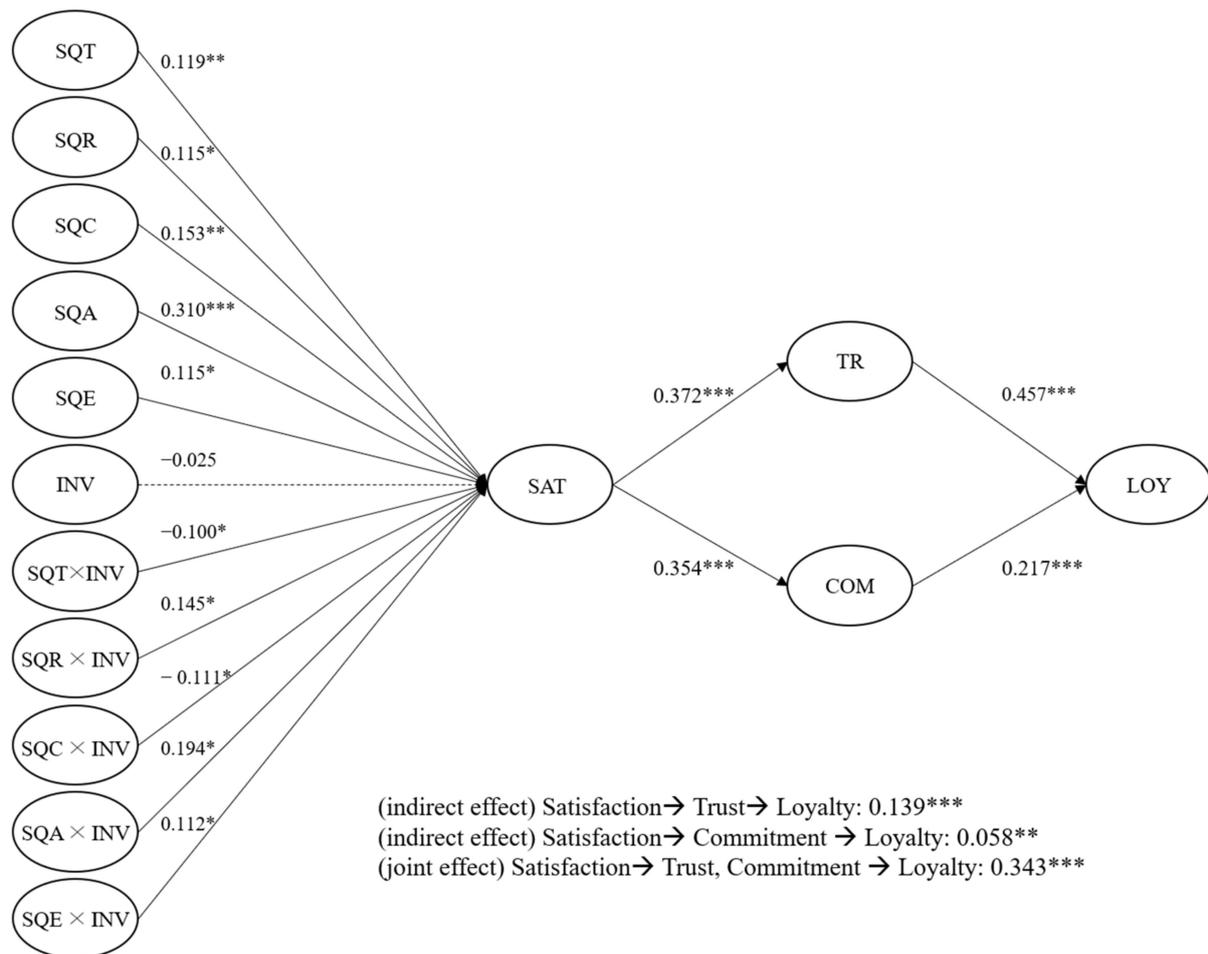
Path	Standardized Estimate	S.E.	<i>p</i>
(indirect effect) SAT → TR → LOY	0.139	0.032	$p < 0.001$
(indirect effect) SAT → COM → LOY	0.058	0.017	$p < 0.01$
(joint effect) SAT → TR, COM → LOY	0.343	0.056	$p < 0.001$

Note: SAT = satisfaction; TR = trust; COM = commitment; LOY = loyalty.

**Table 4.** Standardized structural estimates.

Path	Estimate	SE	<i>p</i>	Results
H1: SQT → SAT	0.119	0.045	$p < 0.01$	supported
H2: SQR → SAT	0.115	0.045	$p < 0.05$	supported
H3: SQC → SAT	0.153	0.047	$p < 0.01$	supported
H4: SQA → SAT	0.310	0.046	$p < 0.001$	supported
H5: SQE → SAT	0.115	0.055	$p < 0.05$	supported
H6: SQT × INV → SAT	−0.025	0.045	$p > 0.05$	supported
H7: SQR × INV → SAT	−0.100	0.040	$p < 0.05$	supported
H8: SQC × INV → SAT	0.145	0.058	$p < 0.05$	supported
H9: SQA × INV → SAT	−0.111	0.048	$p < 0.05$	supported
H10: SQE × INV → SAT	0.194	0.063	$p < 0.05$	supported
H11: SAT → TR	0.372	0.041	$p < 0.001$	supported
H12: SAT → COM	0.354	0.039	$p < 0.001$	supported
H13: TR → LOY	0.457	0.037	$p < 0.001$	supported
H14: COM → LOY	0.217	0.039	$p < 0.001$	supported
H15: SAT → TR → LOY	0.139	0.032	$p < 0.001$	supported
H16: SAT → COM → LOY	0.058	0.017	$p < 0.01$	supported
H17: SAT → TR, COM → LOY	0.343	0.056	$p < 0.001$	supported

Note: SE = standardized estimate; SQT = tangibility; SQR = reliability; SQC = responsiveness; SQA = assurance; SQE = empathy; SAT = satisfaction; TR = trust; COM = commitment; LOY = loyalty; INV = sport involvement.



**Figure 2.** Results of hypothesis testing. Note: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

## 5. Discussion

### 5.1. Theoretical Implications

The present study makes several theoretical contributions to the literature on service quality and consumer psychology and behavior. First, while prior scholars in the marketing literature have demonstrated the formative role of five factors of service quality (i.e., tangibility, reliability, responsiveness, assurance, and empathy) in affecting customer satisfaction in various fields—for instance, financial services [109], airline services [110], travel agency services [35], retail services [111], and hospital services [112]—further research is needed to help academics and practitioners understand the core factor influencing consumer satisfaction in the field of sports centers.

Parasuraman et al. used standardized slope coefficients to verify the relative importance of service quality components and suggested that higher coefficients had higher importance [16]. Accordingly, this study identified assurance as having the greatest effect on customer satisfaction in the context of sports fitness center services. This can be interpreted to mean that higher assurance of service quality (e.g., the knowledge, manner, attitude, stability, trust, and delivery ability of the employees) has greater influence on customer satisfaction. Cavana et al. found that railway service assurance had the greatest impact on customer satisfaction, which is consistent with the result of this study [113]. Chelladurai et al. argued that rather than tangible facilities, equipment, and secondary services (e.g., food provision) in sports centers, human services through the interpersonal relationship between the customer and the instructor who guides and manages the customers are important, which is also consistent with the results of this study [114]. In addition, the outcome of this research reinforces another study's finding that, among the service

quality factors perceived by participants in the context of water leisure sports, assurance had the greatest impact on satisfaction [115]. Assurance is a factor related to trust in the business process [16]. In other words, assurance is the employee's stability and politeness, and assurance showed a higher influence than tangibility on customer satisfaction; this indicates that sports center customers are more satisfied with the employees' expertise in fitness, assurance of relevant knowledge, politeness, and kindness.

Second, although past consumer psychology and sports marketing studies have found that service quality helps business operators create positive customer experience and solidier loyalty during various corporate marketing activities, there is limited understanding of the various psychological mechanisms that drive the positive effects of satisfaction on customer responses. Accordingly, the current study demonstrated the mediating role of trust and customer commitment between customer satisfaction and future behaviors. In this regard, the empirical evidence of the mediation of trust and customer commitment are theoretically important because it explains the different mechanism whereby satisfaction determines loyalty through trust and customer commitment, as well as a comparison of the mediating effects of the two psychological mechanism factors. Specifically, trust is identified as having a higher effect on mediating customer loyalty compared to customer commitment. One of the possible explanations is that within a sports fitness service context, trust acts as an important mediator to maintain a positive attitude within the sports center. Since a sports center is mainly based on intangible service delivery, the existence of a strong sense of reliability and identification with other staff members and users is important, as customers can easily switch to other sports centers [116]. However, the role of commitment is undeniable, as the existence of commitment is important for a successful relationship atmosphere of higher quality, which can influence continuous behavioral intention [76]. These findings are also consistent with previous work demonstrating that customer satisfaction has a positive impact on customer psychological responses (i.e., trust and customer commitment), and customer psychological responses ultimately affect member retention and the long-term profitability of an organization [117,118].

Third, previous studies on sports fitness center service quality mainly paid attention to the direct or indirect effects of several factors on customer satisfaction. Moreover, the previous studies did not address when and how such effects were amplified or diminished depending on certain conditions (i.e., moderators). Understanding conditional (i.e., moderating) effects thus provides us with new insights into delivering tailor-made services for highly involved or less involved customers. Hence, the findings of this study extend the literature on sports fitness center service quality by uncovering the moderating role of sport involvement in customer satisfaction. In other words, the study considered how tangibility, reliability, responsiveness, assurance, and empathy affect customer experience in evaluating customer satisfaction depending on sport involvement. Based on this, it presents a meaningful theoretical perspective in that it addresses the limitation of the existing studies that regarded sports center users as a homogeneous group.

Interestingly, for consumers who were highly involved in sports, the effect of reliability and assurance on customer satisfaction decreased. Furthermore, the higher the sport involvement, the greater the effect of responsiveness and empathy on customer satisfaction. Reliability and assurance can be interpreted as more important factors for customers with lower sport involvement, and responsiveness and empathy were more important factors for customers with higher sport involvement. Kim and Ko argued that, in general, high involvement means rich experience and knowledge of the target sport; thus, high-involvement consumers' experiential evaluation of sports consumption is based on different criteria from that of sports consumers with low involvement [119]. Specifically, viewers with low sport involvement in virtual reality sports have a high possibility of evaluating the viewing experience based on peripheral factors that are not directly related to sports, such as VR, which can increase the sense of reality (e.g., media vividness, interaction, and presence). It was also reported that the viewers with high sport involvement evaluated the experiences based on the information directly related to sports (e.g., the quality of the

sports games). In this context, the reliability and assurance aspects of sports center service quality can be interpreted as peripheral factors for evaluating overall customer satisfaction, while responsiveness and empathy were the central factors. Such an interpretation is underpinned by the findings of existing studies on consumption experience [120,121], viewing experience [119], and online advertising marketing [122], as well as by the elaboration likelihood model [42] that explains information processing for the specific target in line with involvement.

Specifically, customers with low sport involvement were more likely to use factors directly related to reliability and assurance as important criteria in making an overall evaluation of the sports center. In other words, it was inferred that customers with low sport involvement showed high tendencies of evaluating sports fitness centers based on the promised program content of their sports fitness center, the center's ability to solve any problems, the ability to operate the change and refund system, the ability to avoid mistakes, professionalism, the skills and knowledge of the instructors, the exclusion of risk in financial transactions, and employee attitude. Additionally, consumers with high sport involvement were more likely to use factors directly related to responsiveness and empathy as important criteria in the overall evaluation of the sports center. For example, customers with a high level of sport involvement were more likely to evaluate sports centers based on the following factors: responds promptly to customer needs, responds kindly, provides prompt and necessary services, provides personal attention to customers, considers customer interests, identifies customer needs, provides convenient class times for customers, and listens to customers' thoughts and opinions. Furthermore, the effect of tangibility on customer satisfaction in line with sport involvement was not statistically significant. However, the direct effect of tangibility on customer satisfaction, without moderating variables, was found to be significant. Hence, regardless of the level of sport involvement, it can be interpreted that all sports center customers considered factors such as external structure, spatial environment, facility cleanliness, physical facilities, equipment, and employee appearance as the main criteria for their evaluation.

Furthermore, customer satisfaction was found to have a positive effect on loyalty through trust and customer commitment. This means that trust and customer commitment were two important parameters for the relationship between customer satisfaction and sports center customer loyalty. These results support the research findings of Valenzuela and Vásquez-Párraga that hotel managers should make efforts not only to satisfy customers but also to build sufficient trust in order to build customer loyalty [123]. Moreover, the significant mediating effect of customer commitment is consistent with the results of [124] in a restaurant service quality study, which showed that customer satisfaction had a significant effect on customer loyalty through customers' emotional commitment, such as attachment to and identification with a restaurant [124]. In addition, this study also provided an alternative view of the role of trust and commitment in existing studies of customer loyalty using empirical evidence. The findings from the study suggest that the joint effect of trust and customer commitment has a statistically significant effect on customer loyalty. Thus, this study provides empirical evidence beyond Chen's [88] finding that the joint effect of trust and commitment is a highly significant influencing factor for customer loyalty.

## 5.2. Practical Implications

From a practical point of view, the findings of the present study provided more specific operational strategies and meaningful implications for marketers, sports center managers, marketing policymakers, and health professionals. First, this study confirmed that each factor of service quality affected customer satisfaction; the order of impact for each factor is assurance, responsiveness, tangibility, reliability, and empathy. Based on these results, sports center operators need to establish an operational strategy to increase the assurance of sports center services. In other words, it is necessary to improve the customer orientation of the employees and ensure that they have the necessary skills and knowledge, as well as the right attitude [36]. Specifically, when selecting employees, the skills and knowledge

of the instructors should become the selection criteria, and there should be continuous training to improve the attitudes and service expertise of the employees. Professional and safe transaction procedures should also be developed and implemented to ensure the safety of transactions with customers.

Second, the results of the mediating effects have implications for sports center managers. The present study has demonstrated that trust is more likely to generate loyalty to a sports center from satisfied customers. This finding differs from previous research on online business environments [116], which noted that customer commitment has a greater mediating effect than trust on continuous use intentions. In this regard, a possible explanation for the finding is that for the offline physical service industry (e.g., sports fitness center service), the degree of trust between customers and service providers may make it easier for customers to be loyal to a sports center more than the sense of cohesiveness and belonging (i.e., commitment). Therefore, managers may need to pay attention to the dependability, competency, and integrity of the sports centers' service offering and perform responsibly in terms of center users' feedback [125]. In addition to solely emphasizing trust or customer commitment, managers should make every effort to establish a trusting relationship with their clients while simultaneously fostering an intrinsic commitment to maintaining a connection with the sports center [89]. By establishing both of these psychological connections, this approach holds greater potential for improving customer loyalty and ultimately benefiting the sports center.

Third, with respect to the sport involvement factor, our findings indicated that it is particularly necessary to organize a service package and prepare an environment that focuses on the responsiveness and empathy of the service for highly involved consumers, and there should be services and procedures to provide reliability and assurance of services for less involved customers. Our study suggests that segmentation using sport involvement profiles provides practitioners with insights concerning their clients' continuous consumption intention, customer satisfaction, and loyalty. Market segmentation facilitates the process that a researcher or manager uses to identify groups or consumers with similar needs or characteristics [126]. While previous researchers have identified that market segments are critical to the successful development of management strategies in tangible product marketing, few intangible services (e.g., a sports fitness center service) employ segmentation strategies [127]. This is due to the view of many operators that segmenting the service market would be troublesome, as failure to segment the market would have negative effects for service organization and potential customers (e.g., specific groups of people are ignored or duplicate services are offered) (cf. [128]). In other words, service providers must customize their service offerings to satisfy each customer [129]. Specifically, we suggest that the managers of the sports centers should judge the level of customer involvement in advance through simple questionnaires or face-to-face communication between staff and customers. Based on this, managers can divide customers into identifiable groups that share similar characteristics and exhibit common behaviors—for example, by conducting a profile of the sports center's customers based on their level of sport involvement, including customer behavior and service preferences. In customer groups marked as high involvement, more emphasis should be placed on delivering a more empathetic and responsive service, whereas for customer groups identified as less involved customers, sports center providers should focus on reliable and assured service. Also, notably, the tangibility of service quality is an important factor recognized by all sports center consumers. Therefore, sports center operators should improve the appearance and clothing of their employees and regularly check the cleanliness of the indoor environment and equipment.

## 6. Final Considerations, Limitations, and Future Research

The findings extend the application of the service quality model and shed light on the role of sport involvement as a moderator in the relationship between service quality elements and consumer satisfaction in sports fitness centers. This study provides valuable insights into the underlying mechanisms through which service quality influences cus-

customer loyalty. Moreover, the research identifies the mediating role of trust and customer commitment in the relationship between customer satisfaction and loyalty. These theoretical implications enhance our understanding of consumer experiences and loyalty in the context of sports fitness centers. Additionally, the practical implications of this study offer guidance for developing effective service quality strategies in sports fitness centers, ensuring long-term sustainability and customer retention.

While this study has yielded valuable insights, it is important to acknowledge its limitations. First, this study has some limitations in representing the population by extracting samples through the convenient sampling method of targeting sports center users in a specific region of China. Therefore, attention should be paid to generalizing the results of this study to other groups. Second, the perceived service quality of sports centers in this study cannot be generalized to all sports center types. This is because, depending on the type of sports center, the sports center service quality attributes that consumers value may differ from each other. Therefore, follow-up studies should verify the effect of service quality on consumer behavior based on the type of sports center. Lastly, this study explored the influence of service quality components in line with sport involvement on consumer satisfaction in order to overcome the limitations of existing studies that regard consumers as homogeneous groups. Although we established a research model reflecting the characteristics of consumers based on sport involvement, it is limited in that only sport involvement was set as a moderating variable due to the complexity of the model. In addition to involvement, if various characteristics—such as consumption motives [130,131]—are set as moderating variables to verify the pattern of the influence of specific service quality components on customer satisfaction, there will be more meaningful implications to improve sports center service quality and loyalty.

In conclusion, the findings of this study significantly contribute to the broader comprehension of service quality, consumer experiences, and loyalty dynamics within the context of sports fitness centers. By shedding light on the intricate interplay between these elements, this research not only enriches our insights but also provides valuable guidance for practitioners aiming to enhance customer satisfaction and loyalty in sports fitness settings. Furthermore, while the identified limitations underscore the boundaries of our current investigation, they also open promising avenues for future research. Addressing these limitations and delving deeper into the factors that influence consumer behaviors will also enhance the comprehensiveness and practical applicability of the study's outcomes.

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