Increasing the willingness to stay – a novel and comprehensive member satisfaction index (MSI) model tested in a leading German tennis club

Kathrin Kölbl
Department of Marketing Management,
Duale Hochschule Baden-Württemberg Mannheim, Mannheim, Germany and
Institute for Sports Medicine, Alpine Medicine and Health Tourism (ISAG),
UMIT TIROL - Private University for Health Sciences and Health Technology,
Hall, Austria

Cornelia Blank and Wolfgang Schobersberger
Institute for Sports Medicine, Alpine Medicine and Health Tourism (ISAG),
UMIT TIROL - Private University for Health Sciences and Health Technology,
Hall, Austria, and
Mike Peters
Department of Strategic Management, Marketing and Tourism,
University of Innsbruck, Innsbruck, Austria

Abstract
Purpose – This study aims to address customer focus as an important component of total quality management (TQM) and explore the key drivers of member satisfaction in tennis clubs via a novel theory-based member satisfaction index (MSI) model with high explanatory and predictive power. Furthermore, the study aims to investigate the relationship between satisfaction and behavioral intentions (willingness to stay; WTS) with consideration of the mediating effect of identification with the club.
Design/methodology/approach – This study uses variance-based partial least squares structural equation modeling (PLS-SEM) to estimate the MSI model, which was tested in a leading tennis club in Germany (n = 185).
Findings – The results reveal that club atmosphere, club facilities and the price/quality ratio of the membership fee are the most important drivers of member satisfaction in tennis clubs. Member satisfaction has a large influence on the WTS of tennis club members. Identification with the club, when included as a mediator in the model, increases the variance explained in WTS considerably.
Research limitations/implications – The small sample limits the generalizability of findings, and further research is recommended.

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The authors would like to thank the editor and reviewers for their helpful comments and suggestions. Furthermore, the authors would like to thank the ZEEB – Center for Empirical and Experimental Business Administration of Baden-Württemberg Cooperative State University (DHBW) Mannheim for providing LimeSurvey, SPSS and SmartPLS and the GESIS – Leibniz-Institute for Social Science Mannheim and Dr Lydia Repke for help with the pretesting of the questionnaire and provision of useful comments.
Practical implications – The MSI model is a useful benchmark tool for club managers who want to quantify the satisfaction and WTS of their club members. In addition, because of the integrated formative measurement models, the PLS-SEM results show which indicators can be used to positively impact satisfaction with each of the service quality dimensions, overall member satisfaction and WTS. The most important of these results are discussed in an importance-performance map analysis.

Originality/value – The MSI model is a multi-attribute index model through which members’ evaluations of various dimensions of service and value are derived through multivariable linear function with each dimension weighted according to its importance in one holistic model. The model shows the strong impact of satisfaction on WTS of sports club members and reveals that findings of previous research on the relationship between fan and spectator identification and loyalty are transferable to sports club members. The MSI represents a new contribution to the literature; it was applied here to tennis clubs but is also suitable for application to other sports clubs.

Keywords Service quality, Value, Satisfaction, Loyalty, PLS-SEM, IPMA

Paper type Research paper

Introduction

By offering facilities for physical activities, sports clubs significantly contribute to the health and well-being of the population (World Health Organization, 2018). Furthermore, leading sports clubs have a major macro-economic impact as large sports facilities employ administrative personnel and trainers and provide services for multiple stakeholders. These clubs also host and organize tournaments and association league competitions (European Commission, 2007).

Germany is among the countries in the EU for which sports clubs play a major role in promoting physical activities (European Commission, 2017). As of January 1, 2021, there were 87,600 sports clubs with a total of 23,377,888 members in Germany (Deutscher Olympischer Sportbund, 2021). After football and gymnastics, tennis is the third-largest sports association in terms of membership (Deutscher Olympischer Sportbund, 2021), and one of the 10 most popular sports in Germany (VuMA, 2022). The 8,794 tennis clubs in Germany have 1,382,824 members (Deutscher Tennisbund, 2021).

In general, sports clubs are increasingly struggling to retain their members. Recruiting and retaining members was the most frequently cited problem in a survey of sports club managers (Breuer and Feiler, 2019). Club marketing, service orientation and, especially, customer (or more specifically member) satisfaction are being increasingly discussed in the sports club context (Schijns et al., 2016; Kim and Ling, 2017), as satisfaction has a major influence on member retention (Avourdiadou and Theodorakis, 2014; MacIntosh and Law, 2015; Loranca-Valle et al., 2021) and economic success (Frennea et al., 2014; Gupta and Zeithaml, 2006). Hence, it is imperative for sports clubs to learn more about the factors that influence member satisfaction and increase loyalty among existing club members, i.e. their willingness to stay (WTS).

Previous literature has indicated that service quality might play a decisive role in member satisfaction in various kinds of sports centers and clubs (Alexandris et al., 2004; Bodet, 2006; Lee et al., 2011; Polyakova and Ramchandani, 2020). Overall satisfaction research is important for this research domain especially as this study concurs with the view that leading sports clubs require a management approach comparable to that of business enterprises. The implementation of total quality management (TQM) comprises creating value, continuous improvement of quality and accurate measurement of performance (Homburg, 2020). All these efforts are aimed at increasing customer satisfaction, which, because of its link to customer loyalty, is also a crucial factor for sports clubs to survive in increasingly competitive markets.

The overall goal of this study is to offer sports club, and more specific tennis club managers, valuable insights into ways to improve member satisfaction (through enhanced club offerings) and WTS. In detail, the current study aims to contribute to the literature by
investigating service quality, value, satisfaction and WTS by application of PLS-SEM in one comprehensive model: the member satisfaction index (MSI) model. Thereby, the study offers six major contributions. We firstly reveal indicators of aspects of service quality in tennis clubs and show how they contribute to satisfaction with each of the service quality dimensions. Second, we show the performance and the total effects of each of the significant indicators on member satisfaction and discuss these findings in an importance-performance map analysis (IPMA). Third, using the MSI model, we outline an approach to measuring member satisfaction in tennis clubs including the provision of performance values based on antecedents of service quality and value, conceptualized in terms of their influenceability by club management. Forth, since, as member retention is one of the main issues of sports clubs (Breuer and Feiler, 2019), we substantiate evidence of the strong influence of membership satisfaction on WTS. Fifth, we extend our model by including the mediating effect of identification with the club on the relationship between member satisfaction and WTS to identify further positive management opportunities for WTS. In this way, we show that the findings of previous research on the relationship between fan and spectator identification and increasing loyalty are transferable to sports club members. Finally, we demonstrate that PLS-SEM is suitable for estimating and testing higher-order constructs in complex relationships and deriving detailed and valuable insights.

To achieve the abovementioned aims, the subsequent chapter introduces the theoretical foundations of service quality and value, member satisfaction, WTS and identification with the club and discusses hypothesis development. The dataset and construct measurements are then described. Thereafter, we present the results and discuss the main findings and their managerial implications. The conclusion includes limitations of the MSI model and potential avenues for further research.

Theoretical foundations and hypothesis development

Service quality and satisfaction

Grönroos (1982) conceptualized perceived service quality as an “outcome of an evaluation process, where the consumer compares his expectations with the service he perceives he has received” (p. 37). Thus, perceived service is compared against expected service, where service perceptions are based on a set of indicators of quality dimensions (Wilson et al., 2021). Furthermore, in the SERVQUAL model of Parasuraman et al. (1985), consumers “typically rely on experience properties when evaluating service quality” (p. 48).

While Grönroos (1984) used the two categorical dimensions of technical quality and functional quality in his model, Parasuraman et al. (1985, 1988) proposed more “descriptive terms” (Brady and Cronin, 2001, p. 44), namely, tangibles, assurances, empathy, responsiveness and reliability. However, a number of studies have failed to support the five-factor structure (e.g. Brady and Cronin, 2001). Therefore, Brady and Cronin (2001) developed interaction quality and physical environment quality as process dimensions influencing service quality during service delivery, as well as outcome quality (which influences service quality as an outcome dimension after service delivery) (Howat and Assaker, 2013). Regarding outcome quality, Alexandris et al. (2004) reported that ensuring health club clients perceive the physical and mental benefits of exercise participation is a “difficult task” (p. 46) with success in the public sports centers study by Polyakova and Ramchandani (2020). As our study focuses on aspects of service in tennis clubs that are influenced by club management, outcome quality is not included in the model. Additionally, according to Brady and Cronin (2001), process dimensions have a larger influence on the overall satisfaction of consumers in competitive environments compared to outcome dimensions.

In the sport context, service quality research is mainly based on process dimensions (Howat and Assaker, 2013; Schijns et al., 2016; Howat et al., 1995). Therefore, with some
adjustments, we follow the framework of Howat and Assaker (2013) by conceptualizing service quality based on process dimensions, namely, general facilities and core services (outdoor tennis courts). Furthermore, club restaurant, club office and club magazine is included as secondary services, which also include evaluations of staff quality. The main difference with our model is the inclusion of club atmosphere as an “aesthetic quality” (Biscaia et al., 2021, p. 1) dimension, which provides a framework for interaction between the club and its members. Club atmosphere reflects the emotional bond among members, but it is also within the sphere of influence of the club management; for this reason, it qualifies for the MSI model as a management tool. The club’s heritage and tradition appear to be an integral element of it (Abosag et al., 2012).

Perceptions of the quality of the above-mentioned service dimensions are based on the various attributes considered in the evaluation process of club members (Ahrendt et al., 2019). By specifying the multiple indicators of each service quality dimension, we also follow this attribute-level approach to investigate members’ perceptions of the quality of antecedents of overall satisfaction (Zeithaml, 1988). As stated in a previous study, “This is mainly because customers have the potential to be highly satisfied by an attribute, while they can be completely dissatisfied by other(s) at the same time” (Albayrak and Caber, 2015, p. 43).

Loranca-Valle et al. (2021) illustrate the often confusing conceptual overlap between service quality and satisfaction. Accordingly, satisfaction does not only relate to a transaction-specific purchase or use experience but develops cumulatively as a result of an assessment of all previous consumption. This form of an inner attitude also includes an emotional component (Bolton and Christopher, 2014) which is relevant to this study because we also included club atmosphere as an antecedent of member satisfaction in the MSI model.

Although there has been some controversy, the literature tends to support satisfaction as an important aspect of service quality (e.g. Cronin and Taylor, 1992). This has also been confirmed in the sport management literature on health clubs (Alexandris et al., 2004), as well as for an Australian sports center (Murray and Howat, 2002) and fitness centers in Greece (Theodorakis et al., 2014) and spectator sport (Biscaia et al., 2021). Furthermore, Bodet (2006) emphasized the importance of aspects of service quality to customer satisfaction in sport services. They observed a direct positive relationship between perceived service quality and satisfaction in various sport contexts; based on this, we propose the following hypothesis:

\[ H1a-f. \text{ There is a direct and positive relationship between the perceived quality of various service dimensions (a-f.) and the overall satisfaction of tennis club members.} \]

Value and satisfaction
As a failure to explore perceptions of pricing seems to be a limitation of service quality-satisfaction models in the sports context (e.g. Murray and Howat, 2002), we extended our model to include the perceived value of services. Zeithaml (1988) conceptualized perceived value as the “consumer’s overall assessment of the utility of a product, based on perceptions of what is received and what is given” (p. 14). Bolton and Drew (1991), similar to McDougall and Levesque (2000), concretized the concept in the form of a benefit-cost ratio, while Ruyter et al. (1997) described “a value-for-money approach” (p. 232). McDougall and Levesque (2000) suggested that value encapsulates various aspects of the service and that customers who perceive that they have received value for money are more satisfied than customers who do not have this impression (Zeithaml, 1988). Dorai and Varshney (2012) posited a conceptual connection between value and satisfaction, as both are derived via an evaluation process; additionally, they state that “value is a superordinate concept subsuming quality and value becomes an input for satisfaction” (p. 405). In the sports management literature, the value was conceptualized similarly by Murray and Howat (2002); they considered value to be an
independent and important antecedent of satisfaction, next to service quality. Tian et al. (2021) focused on overall assessment in their conceptualization of perceived value to investigate the relationship with sports consumption as spectators at the Wuhan Tennis Open, while García-Fernández et al. (2020b, p. 213) proposed a “services deserve what they cost” conceptualization measuring perceived value in CrossFit centers.

Value as a predictor of member satisfaction confirmed for different kinds of sports clubs, e.g. by Murray and Howat (2002), for an Australian sports and leisure center, by Theodorakis et al. (2014) for sport and fitness centers in Greece, by García-Fernández et al. (2018) for low-cost fitness centers, by Kim and Zhang (2019) for martial arts programs and by García-Fernández et al. (2020b) for CrossFit centers. Therefore, we postulate the following hypothesis:

H2. There is a direct and positive relationship between perceived value and the satisfaction of tennis club members.

**Member satisfaction index (MSI) and willingness to stay (WTS)**

Member satisfaction in sports clubs is analogous to customer satisfaction which is due to its major influence on economic success (Frennea et al., 2014) a key target for many business enterprises (Homburg and Bruhn, 2017). As a consequence, customer satisfaction is also discussed in the sport management literature, and researchers have focused on the determinants thereof in different sport settings, and on its relationships with other constructs (especially loyalty [e.g. Moura e Sá and Cunha, 2019]). As suggested by Bodet (2006) and Biscaia et al. (2021) satisfaction could be represented and assessed by service quality dimensions. Taking into account that sports club members accrue considerably more service experience over time than that provided by a single transaction, we propose the concept of overall or “cumulative satisfaction” (p. 31), based on all previous interactions with the club (Bodet, 2012). Therefore, similar to Sarstedt et al.’s (2014) fan satisfaction model and Rosenbusch et al.’s (2018) patient satisfaction model, we constructed the MSI as a multi-attribute model in which members’ evaluations of service dimensions are derived through a multivariable linear function, with each dimension being weighted according to its importance (Sarstedt et al., 2014). The index is based on a formative measurement model (Diamantopoulos and Winklhofer, 2001) and allows measurement of the level of satisfaction in a number of dimensions, and quantification of the impact on the satisfaction of the various service quality indicators (Hair et al., 2022).

Aksoy et al. (2014) conceptualize loyalty as “the combination of commitment to the relationship with behaviors designed to maintain the relationship” (p. 38). Loyalty can be more precisely defined in terms of purchase behavior: Loyal customers continue to buy the same product or service over a given period of time (Gupta and Zeithaml, 2006). For continuously provided services, such as telecommunications and financial services, loyalty is reflected in customer retention (Bolton, 1998). In the sport management literature, loyalty is often conceptualized in terms of behavioral intentions (Howat and Assaker, 2013; Murray and Howat, 2002; Schijns et al., 2016) and less often in terms of attitudinal loyalty (commitment) (Alexandris et al., 2004; Bodet, 2008; Schijns et al., 2016). Behavioral intention includes recommending a club to others (Alexandris et al., 2004; Murray and Howat, 2002), willingness to renew one’s membership (García-Fernández et al., 2018) and, as a reverse-scored item, the intention to unsubscribe (Schlesinger and Nagel, 2013). As these are the three most relevant loyalty-related factors to member retention for sports clubs, we combined them to derive a sports club-specific loyalty construct, i.e. WTS.

Howat et al. (1999) revealed a strong relationship between clients’ satisfaction and their willingness to recommend an Australian sports and leisure center and identified the following predictors of customer retention: the level of customer repurchase (such as
willingness to renew a membership having been unsubscribed), and how willing customers recommend the service to other prospective customers. Murray and Howat (2002) additionally highlighted that satisfaction seems to be a major predictor of the future intentions of clients, especially future purchases. Studies of different sport organizations have provided evidence that satisfaction has a direct and positive effect on behavioral intentions, especially word-of-mouth recommendations (Theodorakis et al., 2014), retention (Schijsn et al., 2016) and future intentions (García-Fernández et al., 2018; Yildiz et al., 2018). Based on these findings, we hypothesize the following:

H3. There is a direct and positive relationship between satisfaction and WTS among tennis club members.

Identification with the club and mediating effect

Social identity theory, which was established by Tajfel (1978) and Tajfel and Turner (1979), posits that an individual defines his or her own identity with reference to the social groups with which he or she is affiliated. Furthermore, this process of group identification also leads to differentiation from other groups (Turner et al., 1987). Following Turner’s (1982) definition of a group “as two or more individuals who share a common social identification of themselves or, which is nearly the same thing, perceive themselves to be members of the same social category” (p. 15), we assume that members of a tennis club form a group, in line with Lock et al. (2009) and Inoue et al. (2022). We included identification in the MSI model as first Bhattacharya and Sen (2003) revealed in their consumer-company identification framework that customer retention is a “key consequence” (p. 83) of identification with the company as the consumer identifies with the company rather than its products. Second with reference to sports clubs Bodet and Bernache-Assollant (2011) recommend team identification to sport managers as “a powerful trigger for positive organizational outcomes” (p. 795) as they found team identification to play a mediating role between satisfaction and loyalty. Identification appears to be strongly linked to the prestige of an organization and to characteristics that positively differentiate one organization from others (Blader and Tyler, 2009). Therefore, sports club managers have the chance to influence identification positively, e.g. by communicating prestige-related information to the club members (Delia and James, 2018).

In sports management research, Wann and Branscombe (1993) developed a model to measure sports fans’ degree of identification with their team. Lock et al. (2009) analyzed the growth of member identification with a newly established sports team. Research has also revealed that identification with a club is a driver of spectator satisfaction (van Leeuwen et al., 2002) and a success factor for sport marketing leading to increased purchase intentions (e.g. Lee and Ferreira, 2013). Theodorakis et al. (2009) confirmed that the degree of identification with a club’s team influences the extent to which perceived service quality predicts ticket repurchase intentions among spectators of a professional sports event. Jang et al. (2018) revealed that outcome has a stronger influence on happiness for sport consumers with high team identification. Kim and Gower (2021) found in their study that the degree of fan identification directly affects attitudes toward the favorite team and, furthermore, directly affects purchase and attendance intentions. Kim et al. (2022) confirmed for minor and major leagues that team identification leads to revisiting intentions.

In leading sports clubs with teams competing in leagues, the lines between spectators, fans and members become increasingly blurred. Therefore, we hypothesize the following:

H4. Member identification mediates the WTS of tennis club members.

Figure 1 illustrates the path model with the constructs included in the MSI model and the hypothesis raised.
**Method**

**Sample and data**

To collect the data for this study, we conducted a survey in a leading tennis club in Germany. We chose this club because its park-like grounds provide the entire spectrum of facilities that one would expect from a leading tennis club, commensurate with those of a country or golf club. Additionally, the tennis club has registered several teams in leagues that are followed by the club members. Therefore, it can be assumed that the revealed identification of fans and spectators is transferable to club members (Wann and Branscombe, 1993). For two reasons, we collected data from a single tennis club. First, for the assessment of formative measurement models, it is advantageous to have a precise knowledge of the conditions on-site. Especially, when evaluating the model, decisions about the exclusion of variables, e.g. because of multicollinearity issues, can be made more accurate in terms of content validity (Hair et al., 2022). Second, following a convenience sampling approach, we also had the support of the club management. We got permission to survey the members and were allowed to announce our study, specifically, the survey in the club magazine to motivate the club members to participation. In Germany, the disclosure of member data is prohibited by statute in many clubs and strict data protection regulations have prevailed since the European General Data Protection Regulation (GDPR) came into force in May 2018. To do so, we must acknowledge the limited generalizability of our results, a point that is further outlined in the limitation section.

To identify the antecedents of member satisfaction in tennis clubs, we conducted semi-directed interviews with 12 club members in the summer of 2018. Before launching the survey, a pre-test involving another 12 club members of all age groups was conducted. Moreover, a research consultation with GESIS Leibniz Institute for Social Science provided information to the satisfaction scales, and the time required to complete the survey (12–15 min). In order to prevent common method bias in the data which is a concern of self-report studies (Podsakoff and Organ, 1986; Podsakoff et al., 2003; Kock, 2015), our survey included introductory messages to increase respondents’ motivation to participate and detailed information to minimize response difficulties. We assured respondents of anonymity, encouraged them to answer spontaneously, stated that there were no right or wrong answers in the survey and offered an additional do not know option (Podsakoff et al., 2012; Lietz, 2010).

We invited 726 club members aged 18 years or above to participate in the survey. The survey was open for 6 weeks after the summer tennis season of 2018, from the middle of
October until the end of November. The MSI model is based on the ratings of members with full membership status. Unlike associate members, full members are allowed to take full advantage of the club’s tennis-specific offerings and can submit ratings based on their own experience. Among the 726 adult members surveyed, 491 had full membership status; of these, 185 (37.8%) completed the survey (for sociodemographic information, see Table 1). According to a power analysis ($r^2 = 0.1$, $p = 0.05$, power = 0.90), only 133 observations were required (Faul et al., 2009; Cohen, 1992). The minimum number of observations based on the PLS-SEM rule of thumb for our final model was 110 (Hair et al., 2011, 2022).

Following Hair et al. (2022), we removed observations with more than 15% missing values. In our data with $n = 185$ observations and 51 variables, there are all in all 128 missing values. Mean value replacement was used when less than 5% of the values were missing for a given indicator. Descriptive analysis conducted with SPSS 28 showed that all variables are negatively skewed (Fornell, 1995), 19 of the 51 variables with values greater than −1.0. All variables were not normally distributed, $p < 0.01$, assessed by Shapiro–Wilk test. To confirm the suitability of the respondents, we also checked for nonresponse bias. As shown in Table 1 males, age group 51–65 years, and duration of membership $\geq$25 years are overrepresented. For this reason, we tested for variance homogeneity using Levene’s test, which showed statistical significance ($p < 0.05$) for 3 (gender), 32 (age) and 12 (duration of membership) of the total 51 variables. As equal variances for all variables could not be generally assumed we included gender, age and duration of membership as control variables in the proposed MSI model.

This study uses variance-based partial least squares structural equation modeling (PLS-SEM) as a multivariate analysis of the second generation to estimate the MSI model (Hair et al., 2022; Sarstedt et al., 2020b). There are two types of SEM: covariance-based SEM (CB-SEM) and partial least squares SEM (PLS-SEM). There are various reasons that PLS-SEM is the appropriate method for this study. The MSI model has a certain complexity with several constructs that are measured by numerous indicators which are both reflective and formative specifying what makes the application of PLS-SEM compulsory (Henseler et al., 2016). In general, the frequency distribution of satisfaction ratings is negatively skewed (Fornell, 1995), which has been confirmed for our sample by descriptive data analysis. PLS-SEM is a nonparametric method (Hair et al., 2022). In our study, we do not understand mediation as a single process and PLS-SEM enables us to estimate the entire structural model in a single analysis (Sarstedt et al., 2020a). Furthermore, PLS-SEM has been applied in the sports club context before (Liu et al., 2021; Schijns et al., 2016). The model estimation was conducted using SmartPLS 3 software (Ringle et al., 2015). Mode A was selected to calculate the weights of the formative measurement models (Rigdon et al., 2017).

| Variable                          | Category | Sample $n$ | %   | Full club members $N$ | %   |
|----------------------------------|----------|------------|-----|-----------------------|-----|
| Gender                           | Male     | 118        | 63.8| 303                   | 61.7|
|                                  | Female   | 67         | 36.2| 188                   | 38.3|
| Age (years)                      | 18-34    | 34         | 18.4| 154                   | 31.3|
|                                  | 35-50    | 46         | 24.9| 112                   | 22.8|
|                                  | 51-65    | 65         | 35.1| 127                   | 25.9|
|                                  | $\geq$ 66| 40         | 21.7| 98                    | 20.0|
| Duration of membership (years)   | $\leq$ 5| 35         | 18.9| 149                   | 30.3|
|                                  | 6-24     | 87         | 47.0| 211                   | 43.0|
|                                  | $\geq$ 25| 63         | 34.1| 131                   | 26.7|
| All groups                       |          | 185        | 100 | 491                   | 100 |

Table 1. Sociodemographic information of the respondents ($n = 185$)
**Measurement scales**

**Satisfaction, service quality and value.** Similarly to Sarstedt et al. (2014), the MSI includes an overall satisfaction statement. Furthermore, six process service quality dimensions are measured by 45 service quality indicators. The data analysis revealed four indicators measuring similar information which could lead to collinearity issues. So, the final MSI model includes 41 service indicators (Appendix, Table A1). Similar to Nuviala et al. (2012), we measured perceived value by asking “How satisfied are you with the price/quality ratio of the membership fee?”. Murray and Howat (2002) and McDougall and Levesque (2000) argued for, and validated, the use of a single item to measure value.

Similar to Bolton (1998) we asked the respondents “How satisfied are you about XXX?” as a measure of their perceptions of service quality, value and overall satisfaction. Each item was responded to via a seven-point-scale ranging from “very dissatisfied” to “very satisfied” (Sarstedt et al., 2014).

**WTS.** The WTS construct was measured by Finn’s (2005) two-item intention (loyalty) scale, and Schlesinger and Nagel’s (2013) intention to resign construct.

**Identification.** The identification construct was measured by the single-item social identification (SISI) measure validated by Reysen et al. (2013), i.e. “I strongly identify with XXX,” responded to via a seven-point scale (1 = fully disagree, 7 = fully agree). This was supplemented by the social identification item of the MAKO 02 sports science-based social cohesion/team spirit scale (Lau, 2002).

**Results**

The results were assessed according to the sequence and criteria suggested by Chin (2010) and Hair et al. (2019) and Hair et al. (2022).

**Indicator-specific results and measurement model quality**

The measurement model (outer model) includes two reflective constructs: WTS and identification of club members with the club; the validity and reliability of these constructs had to be evaluated (Table 2). All outer loadings were well above the threshold value of 0.70, which suggests sufficient indicator reliability. With composite reliability of 0.934 (WTS) and 0.921 (identification), the two reflective constructs have high internal consistency, as confirmed by rho_A values of 0.898 (WTS) and 0.828 (identification), and Cronbach’s alpha values of 0.894 (WTS) and 0.828 (identification). Convergent validity is supported by average variance extracted (AVE) values of 0.826 (WTS) and 0.853 (identification) which indicate that far more than half of the variance in their respective indicators was explained. Discriminant validity was evaluated by the Heterotrait-Monotrait (HTMT) ratio of correlations (Henseler et al., 2015) and shows a result significantly below (10,000 subsamples, one-tailed test, \( p < 0.05 \)) the more conservative value of 0.85 (Table 3).

The results obtained with the formative constructs of service quality are shown in Table 4. The percentile bootstrapping procedure (with 10,000 subsamples, one-tailed test, \( p < 0.05 \)) generated \( p \)-values denoting whether the weights contributed significantly to a given

| Reflective construct | Indicator labels | Indicator loadings | Cronbach’s alpha | Rho_A | Composite reliability | AVE |
|----------------------|------------------|--------------------|------------------|-------|-----------------------|-----|
| Willingness to stay (WTS) | L01 | 0.956 | 0.894 | 0.898 | 0.934 | 0.826 |
| | L02 | 0.855 | | | | |
| | L03 | 0.904 | | | | |
| Identification | Ident01 | 0.908 | 0.828 | 0.828 | 0.921 | 0.853 |
| | Ident02 | 0.937 | | | | |

Table 2. Results of the reflective measurement models
In the MSI model, all formative indicators having significant ($p < 0.01$) correlations with the constructs are considered relevant. Variance inflation factor (VIF) should be close to 3 or lower and values of 5 or above indicate critical multicollinearity issues (Hair et al., 2022). In the formative measurement model, the highest VIF value is 3.878 which indicates that multicollinearity is not a severe issue in this study (Table 4).

As shown in Table 4 satisfaction with the club as a “well-being oasis” (0.347) had a major influence on the club atmosphere. The ambience of the club facilities (0.292) contributed most to the satisfaction with this construct. Satisfaction with the outdoor tennis courts was based mainly on the condition and cleanliness of the courts (0.202), followed by their availability (0.174). Staff friendliness (0.426) was the strongest driver of satisfaction with the club office. The price/quality ratio (0.169), followed by the quality of the food (0.162), were the most important drivers of satisfaction with the club restaurant. Satisfaction with the content (0.322) was the most important driver of satisfaction with the club magazine, closely followed by the quantity of advertising (0.292). Table 4 also illustrates the total effects on the target construct, MSI and the performance values (on a scale from 0 to 100) for all the service quality and value indicators.

In a final step to evaluate the measurement model following Hair et al. (2018), the latent variables’ mode of measurement (i.e. reflective or formative) was tested via confirmatory tetrad analysis (CTA; Gudergan et al., 2008). As shown in Table A2 in the MSI model, all exogenous constructs with at least four indicators met the requirement for this analysis and empirically supported the formative measurement approach.

**Construct-specific results and structural model quality**

Multicollinearity is not at a critical level in this study. For VIF values of 2.582 and below, the MSI model can also be considered uncontaminated by common method bias (Kock, 2015). The $R^2$ values of the member satisfaction (0.509) and WTS (0.680) constructs were significant ($p < 0.01$). In other words, slightly more than 50% of the variance in member satisfaction was explained by satisfaction with the club offerings. Furthermore, member satisfaction and identification with the club explained 68% of the variance in WTS. An $R^2$ value for the identification construct was also obtained, although this is not intended to be interpreted. Table A3 and Figure 2 illustrate these results, including the performance values (PerfV) of the service quality constructs, MSI, identification and WTS on a scale from 0 to 100.

The predictive power of the model can be determined using the PLS-predict procedure which provides an out-of-sample prediction. The $Q^2_{\text{predict}}$ values ($r = 10, k = 10$) are all above zero (Table A5) and indicate the high predictive power of the MSI model (Hair et al., 2019). Furthermore, the comparison of the prediction errors between PLS-SEM and the linear model (LM) showed that PLS-SEM outperformed the most naïve benchmark: the PLS-SEM root mean squared error (RMSE) values for all indicators were lower than those of the LM (Table A5).

**Assessment of the relationships between constructs including mediation analysis**

Regarding the relationships of the exogenous constructs with member satisfaction, the standardized coefficients of the service quality dimensions of club atmosphere ($p < 0.01$) and club facilities ($p < 0.05$) and of the perceived value measured by the PQR of the membership

| Identification                  | Willingness to stay (WTS) | 0.726       |
|--------------------------------|---------------------------|-------------|
| Note(s): CI$_{95}$ = Upper bound of the one-sided 95% percentile confidence interval | CI$_{95}^*$ = 0.821 |
| Formative constructs (composites) | Indicator labels | Formative indicators | Outer weights (outer loadings) | p value of the outer weights | 95% percentile confidence interval | VIF | Total effects (unstandardized) | Indicator performance values |
|---------------------------------|-----------------|---------------------|-------------------------------|-------------------------------|-----------------------------------|-----|--------------------------------|-------------------------------|
| Satisfaction with the club atmosphere | Ca01 | Sporting performance | 0.182 (0.599) | 0.001 | 0.122 0.236 | 1.407 | 0.091 | 89.41 |
|                                  | Ca02 | Reputation | 0.216 (0.777) | 0.001 | 0.175 0.251 | 1.909 | 0.099 | 82.61 |
|                                  | Ca03 | Club as well-being oasis | 0.347 (0.854) | 0.001 | 0.301 0.408 | 1.993 | 0.107 | 66.40 |
|                                  | Ca04 | Sophisticated appearance | 0.275 (0.822) | 0.001 | 0.235 0.313 | 2.013 | 0.102 | 75.24 |
|                                  | Ca05 | Maintenance of club traditions | 0.259 (0.778) | 0.001 | 0.205 0.314 | 1.749 | 0.096 | 73.24 |
| Satisfaction with the club facilities | Cf01 | Parking | 0.113 (0.404) | 0.008 | 0.033 0.187 | 1.343 | 0.025 | 79.64 |
|                                  | Cf02 | Signposting | 0.089 (0.489) | 0.008 | 0.023 0.144 | 1.440 | 0.022 | 73.96 |
|                                  | Cf03 | Ambience | 0.292 (0.808) | 0.001 | 0.241 0.348 | 1.825 | 0.056 | 72.79 |
|                                  | Cf04 | Condition of the green area | 0.225 (0.755) | 0.001 | 0.175 0.274 | 1.938 | 0.032 | 51.54 |
|                                  | Cf05 | External appearance of the club house | 0.225 (0.758) | 0.001 | 0.178 0.270 | 2.000 | 0.043 | 59.19 |
|                                  | Cf06 | Condition and cleanliness of the locker rooms | 0.210 (0.773) | 0.001 | 0.158 0.257 | 1.973 | 0.044 | 65.84 |
|                                  | Cf07 | Overall impression of the pool | 0.341 (0.714) | 0.001 | 0.183 0.303 | 1.583 | 0.059 | 75.95 |
| Satisfaction with tennis courts outdoor | Co01 | Placement of the tennis courts | 0.088 (0.434) | 0.011 | 0.022 0.147 | 1.702 | 0.005 | 82.52 |
|                                  | Co02 | Availability | 0.174 (0.550) | 0.001 | 0.118 0.237 | 2.017 | 0.010 | 82.89 |
|                                  | Co03 | Booking system | 0.135 (0.489) | 0.001 | 0.082 0.192 | 1.707 | 0.007 | 80.91 |
|                                  | Co04 | Light-shadow ratio | 0.079 (0.581) | 0.007 | 0.016 0.121 | 1.711 | 0.005 | 76.41 |
|                                  | Co05 | Flatness | 0.152 (0.683) | 0.001 | 0.110 0.195 | 2.036 | 0.005 | 49.01 |
|                                  | Co06 | Condition and cleanliness | 0.232 (0.718) | 0.001 | 0.160 0.253 | 2.985 | 0.007 | 43.06 |
|                                  | Co07 | Equipment | 0.161 (0.726) | 0.001 | 0.122 0.202 | 2.290 | 0.006 | 53.69 |
|                                  | Co08 | Operability of irrigation | 0.121 (0.713) | 0.001 | 0.085 0.154 | 2.169 | 0.006 | 72.16 |
|                                  | Co09 | Waste bins | 0.119 (0.736) | 0.001 | 0.076 0.158 | 2.571 | 0.005 | 65.94 |
|                                  | Co10 | Parasols | 0.146 (0.758) | 0.001 | 0.106 0.186 | 2.910 | 0.006 | 57.73 |
|                                  | Co11 | Benches | 0.144 (0.721) | 0.001 | 0.101 0.188 | 2.541 | 0.006 | 61.84 |
| Satisfaction with the club office | Ofo1 | Staff friendliness | 0.426 (0.783) | 0.001 | 0.285 0.587 | 1.353 | −0.027 | 73.09 |
|                                  | Ofo2 | External appearance | 0.361 (0.884) | 0.001 | 0.261 0.436 | 2.687 | −0.030 | 74.49 |
|                                  | Ofo3 | Interior design | 0.400 (0.867) | 0.001 | 0.310 0.504 | 2.497 | −0.028 | 69.87 |

(continued)
| Formative constructs (composites) | Indicator labels | Formative indicators | Outer weights (outer loadings) | $p$ value of the outer weights | 95% percentile confidence interval | VIF | Total effects (unstandardized) | Indicator performance values |
|---------------------------------|-----------------|----------------------|-------------------------------|-------------------------------|---------------------------------|-----|-----------------------------|-------------------------------|
| Satisfaction with the club restaurant | Re01 Opening hours | 0.119 (0.695) | 0.001 | 0.082 | 0.160 | 1.921 | 0.002 | 64.01 |
| | Re02 Access for non-members | 0.099 (0.582) | 0.007 | 0.016 | 0.107 | 1.567 | 0.001 | 64.41 |
| | Re03 Ambience of the clubhouse terrace | 0.122 (0.610) | 0.001 | 0.071 | 0.177 | 1.673 | 0.002 | 74.78 |
| | Re04 Ambience | 0.131 (0.677) | 0.001 | 0.098 | 0.169 | 1.930 | 0.002 | 54.60 |
| | Re05 Service staff friendliness | 0.108 (0.763) | 0.001 | 0.066 | 0.141 | 2.847 | 0.002 | 73.60 |
| | Re07 Speed of operation | 0.137 (0.767) | 0.001 | 0.104 | 0.166 | 2.814 | 0.003 | 70.77 |
| | Re08 Variety of the menu | 0.104 (0.839) | 0.001 | 0.070 | 0.129 | 3.200 | 0.002 | 57.14 |
| | Re09 Quality of the food | 0.162 (0.853) | 0.001 | 0.135 | 0.202 | 3.491 | 0.002 | 52.43 |
| | Re10 Size of the food portions | 0.115 (0.818) | 0.001 | 0.085 | 0.141 | 3.186 | 0.002 | 64.89 |
| | Re11 Variety of beverages | 0.097 (0.713) | 0.001 | 0.049 | 0.139 | 2.097 | 0.002 | 75.14 |
| | Re12 Price/quality ratio | 0.169 (0.813) | 0.001 | 0.140 | 0.213 | 3.334 | 0.003 | 52.07 |
| Satisfaction with the club magazine | Cm01 Layout and design | 0.261 (0.872) | 0.001 | 0.206 | 0.303 | 3.136 | 0.016 | 77.08 |
| | Cm02 Content | 0.222 (0.924) | 0.001 | 0.285 | 0.379 | 3.878 | 0.020 | 74.30 |
| | Cm03 Page size | 0.270 (0.856) | 0.001 | 0.219 | 0.318 | 2.306 | 0.016 | 76.08 |
| | Cm04 Quantity of advertising | 0.292 (0.838) | 0.001 | 0.230 | 0.362 | 2.164 | 0.017 | 71.43 |
| Price/quality ratio of the membership fee | PQR | 1.000 (1.000) | — | — | — | 1.000 | 0.272 | 54.96 |

**Note(s):** Cf05, Cf08, Co06 and Re06 were not included in the MSI model (see Appendix, Table A1)
fee ($p < 0.01$), were significant; this supports H1a, 1d and H2. Club atmosphere is the most important driver of member satisfaction (0.334), followed by the PQR of the membership fee (0.272) and club facilities (0.195). Moreover, the $f^2$ effect sizes, which indicate whether an exogenous construct has a substantive impact on the target construct, showed the same rank order as the path coefficients (Table A3).

The path coefficients reflect the change in the dependent variable when the independent variable is increased by one and all other independent variables remain constant (Henseler et al., 2016). Therefore, the significant standardized path coefficient linking member satisfaction with WTS ($p < 0.01$) confirms the direct positive relationship between these two constructs, and thus supports H3. Moreover, it shows a high $f^2$ effect size (Table A3).

Social identification plays a major role in loyalty in the sports context and arises at least in part from satisfaction. Our mediation analysis followed the procedures suggested by Nitzl et al. (2016) and Hair et al. (2022). The MSI model revealed significant positive ($p < 0.01$) direct and indirect effects of member satisfaction on WTS (Table 5), which supports H4. The identification of members with the club is a complementary partial mediator (Hair et al., 2022).

We report the results, in which gender, age and duration of membership have been considered as control variables to estimate and test the hypothesized effects at constant levels of the control variables. As shown in Table 1, males, age group 51–65 years and duration of membership ≥ 25 years are overrepresented in the sample. Following the recommendations of Hair et al. (2022), gender serves as a dummy-coded variable (0 = female, 1 = male) and is included as a binary single-item construct in the PLS path model. Age and duration of membership are recorded in four and three categories, respectively. The age control construct

| Direct effect | 95% Confidence interval of the direct effect | $p$-value | Indirect effect via identification | 95% Confidence interval of the direct effect | $p$-value |
|---------------|--------------------------------------------|----------|----------------------------------|--------------------------------------------|----------|
| MSI → WTS     | 0.553                                      | 0.435    | 0.675                            | 0.001                                      | 0.166    | 0.103    | 0.223    | 0.001    |

Table 5. Results of the mediation analysis

Note(s): ** = $p < 0.05$, *** = $p < 0.01$
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consists of three dummy-coded indicators (18–34, 35–50 and 51–65 years). The fourth category (≥66 years) which is left out serves as a reference category. The duration of membership consists of two dummy-coded indicators (≤5 and 6–24 years). Here, the third category (≥25 years) serves as a reference category. Age and duration of membership are each incorporated into the MSI model using a formative measurement model specification. Table A3 shows the specific results of the three control variables (i.e. gender, age and duration of membership). Additionally, Table A4 shows the total effects of each age group and each duration of membership group on the target constructs MSI and WTS.

Discussion

In our study, we revisited the relationship between service quality, perceived value, satisfaction and loyalty and gained insights into the relationships among these variables in the context of tennis clubs. We observed a direct positive relationship between the service quality dimensions of club atmosphere and club facilities with tennis club member satisfaction, which supported H1a and H1d. These results are in line with Bodet (2006), who identified cleanliness of the facilities and reputation of the club, as components of the club atmosphere, as key drivers of satisfaction and dissatisfaction in French health clubs. García-Fernández et al. (2020a) confirmed the importance of facilities condition and layout in Spanish low-cost fitness centers. Polyakova and Ramchandani (2020) also confirmed the physical environment as a key element of the provision in leisure service settings. Many other studies reported positive relationships between service quality and satisfaction in different sports organizations, e.g. in Spanish (Nuviala et al., 2012), and Greek fitness centers (Theodorakis et al., 2014) and municipal swimming pools (Moura e Sá and Cunha, 2019). Physical environment as a significant predictor of satisfaction also plays a decisive role in other currently discussed TQM settings (Bellio and Buccoliero, 2021).

Interestingly, having outside tennis courts, which seems to be intuitively very important for tennis clubs, did not significantly impact overall member satisfaction. This finding is in line with the dual-factor motivation theory, which classifies individual needs into two main categories: basic, lower order or hygiene needs; and growth, higher order or motivational needs (Herzberg, 1974; Wolf, 1970) and shows that playable courts are self-evidently important in leading tennis clubs. Expending less effort to the maintenance of tennis courts (hygiene needs) could lead to member dissatisfaction. However, improving the performance of the courts beyond the expected level does not have an additional impact on overall member satisfaction. Nevertheless, tennis courts in tennis clubs can be classified as a core benefit, according to Kotler et al. (2016) and are therefore integral with respect to the perceived value of membership. Club managers should, therefore, closely attend to the performance of the tennis courts themselves and not just focus on additional benefits. Secondary services such as club office, club magazine and club restaurant were not significant in our analyses in accordance with the study by Howat and Assaker (2013).

We also investigated the relationship between perceived value and satisfaction: value, as measured by the PQR of the membership fee, is one of the most important drivers of member satisfaction in leading tennis clubs (H2). This is consistent with the results of Nuviala et al. (2012), and with those obtained in the fitness sector by Murray and Howat (2002), Theodorakis et al. (2014) and García-Fernández et al. (2020b) who tested this relationship using different study designs.

Finally, we verified the direct positive relationship between satisfaction and WTS, with the latter representing behavioral loyalty in tennis clubs (H3). This result is in line with previous sport studies (Howat et al., 1999; Murray and Howat, 2002; Theodorakis et al., 2014; García-Fernández et al., 2018) and Bismaia et al. (2021), who revealed a strong effect of core product
quality on behavioral intentions, particularly for non-professional sports. Our findings are equivalent to other service environments recently presented in TQM research (Ahmed et al., 2021). However, we probed this theme more deeply by analyzing the mediating role of identification with the tennis club. We confirmed that identification is not limited to spectators of sport competitions (Theodorakis et al., 2009; Trail et al., 2005) or fans of sport teams (Kwon et al., 2005); it also exerts a positive influence on the WTS of tennis club members (H4).

This study contributes to the sport management literature by applying the frequently discussed themes of service quality, value, satisfaction and loyalty to the tennis club context. We addressed the recommendations for future research of Theodorakis et al. (2014) by including a wider range of antecedents to explain the variance in overall satisfaction. Our model revealed several drivers of member satisfaction, i.e. club atmosphere, club facilities and the PQR of the membership fee, which might be relevant to similar kinds of sports clubs, especially country clubs and golf clubs, and provide inspiration for further academic research on such sports clubs.

Managerial implications
Similar to the well-established American customer satisfaction index (ACI; Anderson and Fornell, 2000), the MSI model is a useful benchmark tool for tennis club managers wishing to regularly quantify the satisfaction of their members. Therefore, the PLS-SEM results present the actual performance of the exogenous and endogenous constructs, i.e. MSI, identification and WTS, by the average score (Table A3). For better understanding, the average score is rescaled on a scale from 0 to 100, e.g. the MSI in our study was 70.58, indicating considerable scope for optimization. In terms of club atmosphere, club facilities and PQR of the membership fee were the major drivers of member satisfaction. These constructs of service quality and value were measured by several indicators in a formative measurement model, thus providing club managers with guidance on how to improve member satisfaction.

Most obviously, this guidance could be in the form of an IPMA, as shown in Figure 3 (Oliver, 2015; Ringle and Sarstedt, 2016), i.e. “a strategic management map” (Hsu, 2008, p. 3040). In this map, we classify the indicators according to their importance to member
satisfaction (the target construct), to determine the areas that should be targeted to improve member satisfaction. In this manner, an indicator’s importance is based on its overall effect on member satisfaction. An indicator’s performance value is derived from its mean value, converted using a 100-point scale. The measurement points are transferred in a coordinate system split into four quadrants: “do better,” “keep up,” “education” and “no change” (Hsu, 2008, p. 3040; Rosenbusch et al., 2018, p. 274). The “do better” quadrant has the largest implications for management. The PQR of the membership fee and club, as a well-being oasis (Ca03), is of above average importance but show low average performance. Improving these indicators is very important to enhance member satisfaction and, due to the significant positive relationship confirmed herein, the WTS of the club members.

Higher-level member satisfaction is mainly associated with service quality dimensions in the “keep up” quadrant. The indicators (i.e. the club’s sporting performance (Ca01), reputation (Ca02), sophisticated appearance (Ca04) and maintenance of club tradition (Ca05) should be focused on by tennis club managers to maintain high member satisfaction. The “education” quadrant has high-performance indicators (parking (Cf01), pool (Cf09), signposting (Cf02) and the ambience of the club (Cf03) that are less important than the club atmosphere indicators. Club managers should make efforts to translate these high-performance areas into competitive advantages (Hsu, 2008). This applies above all to the pool; in line with MacIntosh and Law (2015), the pool was the most important of the club facilities in the MIS model. Indicators in the “no change” quadrant (condition and cleanliness of the locker rooms (Ci07), external appearance of the club house (Ci06) and condition of the green areas (Ci04) should be a lower priority, as improvements therein only slightly increased member satisfaction.

Furthermore, our study confirms a direct, positive and strong relationship between member satisfaction and WTS and also provides guidance for club managers aiming to further strengthen this relationship by enhancing the identification of members with the club. Böhm (2008) found that identification with an organization arises from a distinct collective identity and proposes in his human resource management based-research that people should have strong prospects (i.e. a clear future direction), as well as a sense of pride based on all of the factors that distinguish a given organization from its competitors (Haslam et al., 2000). Stroebel et al. (2021) suggest merchandise to be a catalyst for identification. These insights shed light on how club managers could enhance the identification of their members with the club (Böhm, 2008).

Conclusions and future research
The goal of this study was to develop a MSI model to learn more about how service quality, value, member satisfaction and WTS act together in sports clubs in one holistic model. Thereby, one major contribution of the study is the development of a questionnaire to measure service quality dimensions in a leading tennis club by a formative specified measurement model which allows the replicability of the study and has not been proposed in earlier research. In addition, we presented the indicators of the significant service quality dimensions and value in an IPMA to identify the need for action to improve member satisfaction. Therefore, we also provided the performance values of the included constructs of the MSI model and its total effects on WTS. We could demonstrate that increased member satisfaction is worth the effort by revealing its high significance to WTS. Our results also indicate that research findings from previous studies on fan identification are transferable to sports club members. These findings provide club management with further opportunities to increase WTS. Our results demonstrate that PLS-SEM is appropriate for estimating and testing higher-order constructs in complex relationships.
Nevertheless, the results of this study are limited given the used sample of a leading tennis club in Germany and should be brought to a broader database. Case studies investigating service quality, value, satisfaction, loyalty and related constructs are prevalent in the sports management literature; examples include a sports and leisure center in Australia (Howat et al., 1999; Murray and Howat, 2002), a health club in Greece (Alexandris et al., 2004), a fitness center in Greece (Avourdiadou and Theodorakis, 2014), a professional football match in Greece (Theodorakis et al., 2011), an American university (e.g. Kwon et al., 2005), a swimming sport center in Greece (Kontogianni et al., 2011), the Wuhan tennis open (Tian et al., 2021) and university training programs for seniors (Doistua et al., 2022).

Further research could test the MSI model in other types of related sports clubs, e.g. leading golf clubs. Thereby, in further research, the demographics gender, age and duration of membership which we included in our study as control variables could be integrated as moderators or as aspects of multi-group analysis (Hair et al., 2018) which requires correspondingly larger sample sizes. Further research could also investigate whether (un) observed heterogeneity affects the MSI model and the strength of the link between MSI and WTS. Furthermore, Valcarce-Torrente et al. (2021) revealed in their study that technology, more specifically fitness apps increased customer satisfaction in fitness centers. Future research could enhance the MSI model to include technological innovations, such as club apps, as additional service quality dimensions. Furthermore, as Damberg (2022) recently revealed that health consciousness is a predictor of behavioral intentions in participant sport, more specifically, the future use intentions of fitness apps, it would be of interest for future research to extend the MSI model to more personal aspects which are at the same time relevant for entire health care systems and investigate health consciousness as a mediator of the relationship between member satisfaction and WTS. In our study, we were able to show that club atmosphere, club facilities and the PQR of the membership fee are the main drivers of member satisfaction in leading tennis clubs and that identification with the club significantly increases the willingness to stay. As PLS-SEM handles complex models with many structural model relationships, future research could enhance the MSI model by the proposed aspects.

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(The Appendix follows overleaf)
### Table A1.
Description of the items of the questionnaire

| Constructs                          | Indicator labels | Items                                                                 | Scale                             |
|-------------------------------------|------------------|----------------------------------------------------------------------|-----------------------------------|
| Member satisfaction index (MSI; target construct) | S_overall       | How satisfied are you overall with the club?                        | 1 = very dissatisfied to 7 = very satisfied |
| Service quality dimensions          | S_overall       | How satisfied are you with the service quality and value dimension in terms of the following criteria? | 1 = very dissatisfied to 7 = very satisfied |
| Club facilities                     | C001             | Parking                                                              |                                   |
|                                     | C002             | Signposting in the club                                             |                                   |
|                                     | C003             | Ambience of the club                                                |                                   |
|                                     | C004             | Condition and cleanliness of the green area                         |                                   |
|                                     | C005*            | Gravel paths in the club                                            |                                   |
|                                     | C006             | External appearance of the clubhouse                                 |                                   |
|                                     | C007             | Condition and cleanliness of the locker rooms                       |                                   |
|                                     | C008*            | Condition and cleanliness of the restrooms                          |                                   |
|                                     | C009             | Overall impression of the pool                                       |                                   |
| Tennis courts outdoor               | C001             | Placement of tennis courts within the club                          |                                   |
|                                     | C002             | Availability of the courts                                           |                                   |
|                                     | C003             | Booking system of the courts                                         |                                   |
|                                     | C004             | Light-shadow ratio on the courts                                     |                                   |
|                                     | C005             | Flatness of the courts                                               |                                   |
|                                     | C006*            | Grip of the courts                                                   |                                   |
|                                     | C007             | Condition and cleanliness of the courts                              |                                   |
|                                     | C008             | Equipment of the courts (e.g. peeling mats)                          |                                   |
|                                     | C009             | Operability of irrigation                                            |                                   |
|                                     | C010             | Waste bins                                                           |                                   |
|                                     | C011             | Parasols                                                             |                                   |
|                                     | C012             | Benches                                                              |                                   |
| Club office                         | O001             | Staff friendliness                                                   |                                   |
|                                     | O002             | External appearance of the club office                               |                                   |
|                                     | O003             | Interior design of the club office                                   |                                   |
| Club magazine                       | Cm01             | Layout and design                                                     |                                   |
|                                     | Cm02             | Content                                                              |                                   |
|                                     | Cm03             | Page size                                                            |                                   |
|                                     | Cm04             | Quantity of advertising                                              |                                   |
| Club restaurant                     | Re01             | Opening hours                                                        |                                   |
|                                     | Re02             | Access to the club restaurant for non-members                       |                                   |
|                                     | Re03             | Ambience of the clubhouse terrace                                    |                                   |
|                                     | Re04             | Ambience of the club restaurant                                      |                                   |
|                                     | Re05             | Service staff friendliness                                           |                                   |
|                                     | Re06*            | Service staff competence                                             |                                   |
|                                     | Re07             | Speed of operation                                                    |                                   |
|                                     | Re08             | Variety of the menu                                                   |                                   |
|                                     | Re09             | Quality of the food                                                   |                                   |
|                                     | Re10             | Size of the food portions                                            |                                   |
|                                     | Re11             | Variety of beverages                                                 |                                   |
|                                     | Re12             | Price-quality ratio                                                   |                                   |
| Club atmosphere                     | Ca01             | Sporting performance of the club                                     |                                   |
|                                     | Ca02             | Reputation of the club                                               |                                   |
|                                     | Ca03             | Club as a well-being oasis                                           |                                   |
|                                     | Ca04             | Sophisticated appearance of the club                                 |                                   |
|                                     | Ca05             | Maintenance of club traditions                                       |                                   |

(continued)
### Constructs

| Constructs                  | Indicator labels | Items                                                                 | Scale                                                                 |
|-----------------------------|------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|
| **Value**                   |                  |                                                                      |                                                                      |
| Price quality ratio         | PQR              | Price/quality ratio of the membership fee                            |                                                                      |
| Willingness to stay         |                  |                                                                      |                                                                      |
| (WTS; target construct)     | L01              | If you had to decide one more time: Would you join the club again?   | 1 = No, never to 7 = Yes, definitely                                 |
|                             | L02              | How many times have you thought about quitting your membership in the | 1 = never to 7 = permanently                                        |
|                             | L03              | How likely are you to recommend the club to friends and colleagues?  | 1 = very unlikely to 7 = very likely                                 |
| Identification (mediator)   |                  |                                                                      |                                                                      |
|                             | Ident01          | I would do a lot to remain a member                                  | 1 = very strongly disagree to 7 = very strongly agree                 |
|                             | Ident02          | I identify strongly with the club                                    |                                                                      |

**Note(s):** * = Cf05, Cf08, Co06 and Re06 were not included in the MSI model to avoid collinearity to indicators with similar information (Hair et al., 2022), e.g. the restrooms (Cf08) are located within the locker rooms (Cf07)

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### Formative Constructs (with at least four indicators)

| Construct                      | CI Low adjusted* | CI Up adjusted* |
|--------------------------------|------------------|-----------------|
| **Club atmosphere**            |                  |                 |
| 1: Ca01, Ca02, Ca03, Ca04       | 0.024            | 0.587           |
| 2: Ca01, Ca02, Ca04, Ca03       | 0.023            | 0.636           |
| 4: Ca01, Ca02, Ca03, Ca05       | 0.009            | 0.508           |
| **Club facility**               |                  |                 |
| 1: Cf01, Cf02, Cf03, Cf04       | 0.196            | 1.455           |
| 2: Cf01, Cf02, Cf04, Cf03       | 0.320            | 1.543           |
| 13: Cf01, Cf02, Cf04, Cf06      | 0.365            | 1.784           |
| 19: Cf01, Cf02, Cf04, Cf09      | 0.096            | 1.058           |
| 34: Cf01, Cf03, Cf04, Cf07      | 0.103            | 1.163           |
| **Tennis courts outdoor**      |                  |                 |
| 65: Co01, Co02, Co08, Co07      | 0.218            | 2.370           |
| 68: Co01, Co02, Co09, Co07      | 0.006            | 1.142           |
| 70: Co01, Co02, Co07, Co10      | 0.066            | 1.533           |
| 71: Co01, Co02, Co10, Co07      | 0.071            | 1.605           |
| 88: Co01, Co02, Co12, Co08      | 0.100            | 1.843           |
| 131: Co01, Co03, Co07, Co05     | 0.154            | 1.509           |
| 224: Co01, Co04, Co12, Co07     | 0.083            | 1.029           |
| 227: Co01, Co04, Co09, Co08     | 0.074            | 0.822           |
| 248: Co01, Co04, Co11, Co10     | 0.206            | 1.281           |
| 428: Co02, Co03, Co10, Co09     | 0.043            | 1.609           |
| 505: Co02, Co04, Co11, Co12     | 0.085            | 1.636           |
| **Club restaurant**            |                  |                 |
| 1: Re01, Re02, Re03, Re04      | 0.287            | 2.693           |
| 59: Re01, Re02, Re11, Re05     | 0.056            | 1.577           |
| **Club magazine**              |                  |                 |
| 2: Cm01, Cm02, Cm04, Cm03      | 0.021            | 0.319           |

**Note(s):** *90% Bonferroni corrected and bias adjusted confidence interval

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Table A1.

Table A2. Results confirmatory tetrad analysis – nonredundant tetrads significantly different from zero
### TQM

| Outcome   | Predictor                      | Hypotheses | Path coefficient | p-value | 95% bootstrap confidence interval | $f^2$ effect size* | VIF | PerfV |
|-----------|--------------------------------|------------|-----------------|---------|----------------------------------|-------------------|-----|-------|
| MSI       | Club atmosphere                | H1a        | 0.334           | 0.001   | 0.225 – 0.445                    | 0.108 (high)      | 70.58 |       |
|           | Club restaurant                | H1b        | 0.018           | 0.377   | -0.067 – 0.124                   | 0.001 (high)      | 1.608 | 63.99 |
|           | Tennis courts outdoor          | H1c        | 0.042           | 0.293   | -0.073 – 0.180                   | 0.001 (high)      | 2.453 | 66.80 |
|           | Club facilities                | H1d        | 0.195           | 0.023   | 0.028 – 0.351                    | 0.030 (high)      | 2.582 | 68.60 |
|           | Club office                    | H1e        | -0.058          | 0.188   | -0.165 – 0.053                   | 0.004 (high)      | 1.710 | 72.74 |
|           | Club magazine                  | H1f        | 0.045           | 0.253   | -0.071 – 0.153                   | 0.003 (high)      | 1.526 | 74.67 |
|           | Price/quality ratio            | H2         | 0.272           | 0.001   | 0.138 – 0.383                    | 0.087 (high)      | 1.728 | 54.96 |
|           | membership fee                 |            |                 |         |                                  |                   |      |       |
|           | Gender                         |            | -0.029          | 0.299   | -0.119 – 0.060                   | 0.002 (high)      | 1.035 |       |
|           | Age                            |            | -0.039          | 0.242   | -0.147 – 0.035                   | 0.003 (high)      | 1.105 |       |
|           | Duration of membership         |            | -0.017          | 0.388   | -0.119 – 0.072                   | 0.001 (high)      | 1.107 |       |
| WTS       | MSI                            | H3         | 0.553           | 0.001   | 0.435 – 0.675                    | 0.758 (high)      | 74.22 |       |
|           | Identification                 | H4         | 0.396           | 0.001   | 0.271 – 0.493                    | 0.387 (high)      | 1.264 |       |
|           | Gender                         |            | -0.007          | 0.441   | -0.080 – 0.074                   | 0.001 (high)      | 1.268 |       |
|           | Age                            |            | 0.004           | 0.465   | -0.096 – 0.070                   | 0.001             | 1.086 |       |
|           | Duration of membership         |            | -0.141          | 0.006   | -0.210 – -0.048                  | 0.060 (high)      | 1.034 |       |
| Identification | MSI                            | H4         | 0.419           | 0.001   | 0.285 – 0.547                    | 0.213 (high)      | 68.82 |       |

**Note(s):** *Designation of effect sizes according to Kenny (2018), PerfV = Performance value on a scale from 1 to 100

**Table A3.** Structural model results
| Control Variable                  | MSI        | WTS        |
|----------------------------------|------------|------------|
| **Age (years)**                  |            |            |
| 18-34                            | 0.014      | 0.008      |
| 35-50                            | −0.057     | −0.033     |
| 51-65                            | −0.125     | −0.072     |
| **Duration of membership (years)** |            |            |
| ≤5                               | 0.008      | −0.070     |
| 6-24                             | −0.046     | −0.403     |

**Note(s):** Age group ≥66 years serves as a reference age group for the age control variable; duration of membership ≥25 years serves as a reference duration for the duration of membership variable.

| Construct   | Indicator | PLS RMSE | $Q^2_{\text{predict}}$ | LM RSME | PLS-LM RSME |
|-------------|-----------|----------|------------------------|---------|-------------|
| MSI         | S_overall | 1.113    | 0.434                  | 1.200   | −0.087      |
| WTS         | L01       | 1.258    | 0.385                  | 1.396   | −0.138      |
|             | L02       | 1.330    | 0.298                  | 1.537   | −0.207      |
|             | L03       | 1.168    | 0.374                  | 1.285   | −0.117      |

**Table A4.** Total effects (unstandardized) of the control variables' indicators

**Table A5.** PLSpredict analysis results

**Member satisfaction index model**

**Corresponding author**

Mike Peters can be contacted at: Mike.peters@uibk.ac.at

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