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POLYAKOVA, Olga <<http://orcid.org/0000-0002-6947-2394>> and  
RAMCHANDANI, Girish <<http://orcid.org/0000-0001-8650-9382>>

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**Published version**

POLYAKOVA, Olga and RAMCHANDANI, Girish (2020). Perceived service quality among regular users of gyms in public sports centres in the UK. *Managing Sport and Leisure*.

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# Perceived service quality among regular users of gyms in public sports centres in the UK

**Purpose:** The study explores the perceptions of users towards service quality in public sports centres in England. As highly specialised fitness facilities gain popularity in the UK and multipurpose facilities with a broad range of services face new challenges in creating sustainable sports participation, the study focuses on the regular users of gyms in the sports centres.

**Methodology:** An adapted version of the Scale of Service Quality in Recreational Sport (SSQRS) was used to measure how service quality in gyms as a distinct sporting/physical activity context was perceived by regular fitness suite users. Data was collected via an online survey from a random sample of 349 customers who had visited fitness suites regularly in one of twelve public sports centres in England.

**Findings:** A strong linear relationship between the importance attached by respondents to different elements of service quality and the perceived performance of those elements was found to exist. Physical environment, particularly 'equipment', was perceived as the most important aspect of quality by regular gym users, while the performance of 'equipment' and 'ambience' exhibited the strongest relationship with overall perceived service quality.

**Practical implications:** The findings from this study provide implications for facility managers who should closely monitor quality in the physical environment of fitness suites and implement remedial measures where required.

**Research contribution:** The originality of this study is that it considers for the first time fitness suites (i.e. gyms) as a distinct sporting setting in public sports centres to investigate customers' perceptions of service quality.

Keywords: service quality, gyms, regular users, performance-importance gaps

Introduction

Service quality and services management have attracted significant research attention in the recreational sports and health and fitness sectors, however, initially most studies have focused on traditional health care (Arcelay et al., 1999; Ennis & Harrington, 1999; Lagrosen, 2000; Wagar & Rondeau, 1998; Yasin & Alavi, 1999). Before the 2000s the fitness industry had received relatively little research attention (Chelladurai et al., 1987; MacKay & Crompton, 1988; Crompton & MacKay, 1991; Kim & Kim, 1995). Growing research interest in service quality in the fitness industry has emerged over the past decade (Papadimitriou & Karateroliotis, 2000; Chang & Chelladurai, 2003; Alexandris, Zahariadis, Tsorbatzoudis, & Grouios, 2004; Afthinos, Theodorakis, & Nassis, 2005; Ko & Pastore, 2005; Lam, Zhang, & Jensen, 2005; Lagrosen & Lagrosen, 2007; Moxham & Wiseman, 2009; Yildiz, 2011). In the 2000s the interest of academics coincided with the periods of increased UK government focus on the health of the British nation (Robinson, 2004), rapid development of the industry (Algar, 2011) and, lately, a period of stable growth (The Leisure Database Company, 2019).

With regard to the fitness industry, previous literature encouraged future studies to develop and apply industry specific tools for measuring perceived service quality (Papadimitriou & Karateroliotis, 2000; Westerbeek, 2000; Afthinos et al., 2005). Such characteristics as the participatory nature of fitness services, the important role of fitness instructors, and the modes of exercising (i.e. sole workout and in a group-based setting) create the unique context for measuring users' perceptions of service quality in multipurpose sport facilities. This context calls for the data collection of greater relevance to the industry-specific attributes and, hence, of better usefulness in terms of managerial decision making. An industry report by Algar (2015) identified that the competition from fitness facilities which are highly specialised in one type of fitness activity increasingly detracts members from multipurpose facilities with a broad range

of services. The growth of boutique fitness segment in the UK, including HIIT, indoor cycling and yoga studios, suggests that the cost is not a major barrier for people if they can get adequate value for the price and feel as a part of community (The Guardian, 2018). This, in turn, creates a challenge for multipurpose fitness facilities in order to understand their customers better and to ensure higher retention rates. According to a survey by Mintel (2015), exercising in the gym and taking part in fitness classes takes second place (after swimming) amongst the most popular types of activities reported by customers in UK public leisure centres. The growing popularity of these two fitness contexts have been acknowledged by previous studies which measured customers' perceptions of quality in public sports centres and fitness clubs (Ko & Pastore, 2005; Lam et al., 2005; Liu, Taylor, & Shibli, 2009; Yildiz, 2011). Yet, no differentiation was made between users of various fitness activities (e.g. gyms and fitness classes), and the service context in a sports facility was considered as one multipurpose fitness offering.

This paper uses the term 'gym' to describe a training space containing special workout equipment in public sports centres and, by recognising it as distinct physical activity, pioneers investigation into customers' perceptions towards service quality in fitness suites. The key aspects of service quality concept and service quality models used in fitness industry are discussed next. A frequency of attendance is considered through the behavioural lens, i.e. as a factor influencing customers' knowledge and awareness of a gym setting. It is followed by the description of the research approach adopted by this paper, including model development, questionnaire design, data collection and data analysis. Results of the study are presented in accordance to the key research questions and then discussed in the same order. Limitations and recommendations for future research direction conclude this paper.

***Origins of service quality concept***

Traditionally, definition of service quality is formulated as a consumer's judgment about an entity's overall excellence or superiority (Zeithaml, 1987). Service quality has also been described as a form of attitude, related but not equivalent to satisfaction, which results from the comparison of expectations with actual performance (Bolton & Drew, 1991; Parasuraman et al., 1988). More recently, as the result of a critique of the expectations-performance comparison, Cronin and Taylor (1992) suggested that service quality is an attitude, based only on evaluating service performance. Two latter definitions of perceived service quality – the expectation-performance comparison and performance-only evaluation - laid the foundation for the two conceptually different streams in the development of service quality models. With regard to customer's evaluation of service, Berry and Parasuraman (1991) proposed that distinction in desired level of service and an adequate level of service can be explained by the zone of tolerance, i.e. a range of service performance that a customer considers satisfactory. The zone of tolerance theory suggests that the impact on a customer will depend on whether performance of service is above or below this zone. Therefore, performance below the tolerance zone will cause customer frustration and decrease customer loyalty, whereas performance level above the tolerance zone will pleasantly surprise customers and strengthen their loyalty (Johnston, 1995).

Most established service quality models (e.g. Parasuraman, Zeithaml, & Berry, 1985; Brady & Cronin 2001; Dabholkar et al., 1996) have embraced interactional nature of services and the included dimensions related to the interactions with staff involved in service delivery as well as interactions with other customers (e.g. Chang & Chelladurai,

2003; Ko & Pastore 2005). Such dimensions in SERVQUAL model were critiqued for being rather functional aspects of the service encounter (Price, Arnould, & Tierney, 1995), i.e. mainly reflecting the efficiency with which employees deliver the service and not considering the customers' emotional benefits, associated with the social interaction between employees and customers (Peiró, et al. 2005). In contrast, other models (e.g. Brady & Cronin 2001; Ko & Pastore, 2005) integrated elements related to personnel and social interaction on a level beyond core performance, namely friendliness of staff, opportunities to make friends, other customers' positive impact on service perception, and sense of family. To some extent, this integration accounted for the relationship aspect; however, service quality models can only be operationalised under the assumption that customers rationally process the information and treat interactional aspects as functional part of service (Babin, Darden & Griffin, 1994).

### ***Service quality models in fitness industry***

The first service quality models for sport and recreation were created in the form of scales in order to measure the quality of services in a quantitative way. The models inherited conceptual and structural ideas from their predecessors (e.g. thematic areas of service quality, attributes of service quality); and influential approaches such as SERVQUAL also had an impact on the development of quality measures for the sport and fitness. The scale of attributes of fitness services (SAFS) was pioneered by Chelladurai et al. (1987) who were the first to propose the tool for measurement of service quality in fitness centres. Subsequently, other authors developed or adapted service quality models in the context of sport and fitness which were summarised by Polyakova and Mirza (2016). Previous studies suggested different ways of explaining the concept of service quality and, subsequently, various dimensions of quality, i.e.

traditional conceptualisations of service quality as a set of fixed service dimensions. This emphasises the influence that the positivist approach to measuring quality had on the development of quality models for fitness (similarly to service quality models in other industries). Over time, the models have improved the conceptualisation of service quality and became multidimensional (i.e. consisting of several service quality dimensions). In practical terms, these dimensions represent a measurement tool for service quality.

Previously developed scales differed in thoroughness of methodology adopted; amount of the qualitative research employed; and consideration of the findings in earlier research. The model by Brady and Cronin (2001) has been utilised in several studies of service quality in fitness activity (e.g. Alexandris et al., 2004; Ko & Pastore, 2005). This model was recommended by Martinez and Martinez (2010) as “an excellent basis for proposing the attributes of service quality that can be measured” (p. 110). However, there are contradictions that have not been addressed (such as the direction of influence between levels of quality). To overcome these issues, Martinez and Martinez (2010) suggested using Brady and Cronin’s (2001) model alongside the identification of the dimensions of service quality in the context of a particular industry, which was implemented by Ko and Pastore (2005) for recreational sport. Another model (SQAS) developed by Lam et al. (2005) specifically addresses the health-fitness setting and presents a strong basis (from the methodological point of view) for measuring perceived service quality. Yet, Lam et al. (2005) recommended that other researchers should re-examine the SQAS using different samples to study factor structure further and potentially to compare the results with another similar scale. Also, Lam et al.’s (2005) scale does not offer the measurement of overall perceived service quality and does not

include an inter-client interaction aspect nor the outcome quality proposed by several other service quality models (Polyakova & Mirza, 2016).

Service quality was examined by previous research in the context of its links to concepts of satisfaction, value, behavioural intentions and loyalty. Cronin, Brady and Hult (2000) established that that service quality, service value, and satisfaction may all be directly related to behavioural intentions when all of these variables are considered collectively; in addition, the indirect effects of the service quality and value constructs enhance their impact on behavioural intentions. According to Theodorakis, Howat, Ko & Avourdiadou (2014), perceived service quality is an antecedent to value perception, satisfaction and behavioural intentions, whereas value perceptions is a predictor of satisfaction and satisfaction predict behavioural intentions. Since service quality plays an integral role in shaping customer satisfaction and value perceptions, it will be insightful to understand which elements of service offer in sport centre affect the importance of the various decision-making variables.

### ***Performance-importance link***

The main emphasis of this study is on performance-importance link between aspects of quality. Importance-performance analysis (IPA) is normally applied with the assumptions that: a) attribute performance and attribute importance are independent variables; and b) the relationship between attribute performance and overall performance is linear and symmetrical (Matzler et al., 2004). To date, several studies applied performance-importance analysis (IPA) in the context of fitness industry (Dominique-Ferreira Lopes, 2012; Liu, Taylor, and Shibli, 2008; Rial et al., 2008; Yıldız, 2011). Albayrak and Caber (2014) applied the three-factor theory to the context of fitness clubs as well as Penalty-reward-contrast analysis technique (PRCA),



alongside IPA. PRCA was applied under assumption that service-quality attributes have an asymmetric influence on customer satisfaction, i.e. negative performance of an attribute might have a greater impact on overall satisfaction than positive performance of the same attribute, or its positive performance might have a greater effect on customer satisfaction than its negative performance.

Prior to Albayrak and Caber (2014), some studies have already investigated whether service quality attributes have the same impact on satisfaction when compared to the same standard. For example, Bartikowski & Llosa (2004) identified that some attributes always have an impact on satisfaction (invariant attribute weights) and other attributes are performance related (variant attribute weights). Study by Bodet (2006) tested different weights of the attributes which contribute to customer satisfaction by using the Tetraclass model; as a result, it validated four types of contribution to health club customer satisfaction, namely: 'basic attributes', 'plus attributes', 'secondary' and 'key attributes'. This classification is particularly important to consider if the link between service attributes and customer satisfaction is studied, as it helps to identify non-linear and fluctuating influences of service attributes. However, there is no evidence that the same asymmetric relationship is applicable to studies investigating the same construct, i.e. the link between service attributes and overall perceived service quality.

While we do not examine expectations of gym users or impact of service evaluations on their overall satisfaction, the study incorporates analysis of importance that users attribute to service elements. The rationale for this approach is that, among other conceptualisations of perceived service quality described earlier in this section, evaluation of performance without consideration of customers' expectations is most efficient approach to measuring perceived quality (Brady, Cronin Jr & Brand, 2002);

yet, all of attributes may not be equally important to users of gyms. It was argued that separating importance measures and performance measures helps to minimise compounding and order effects (Martilla and James, 1977), while comparison between service quality and importance of service can provide valuable insights for service quality management and, at the same time, eliminate disadvantages associated with inclusion of users' expectations in measurement.

### ***Frequency of service usage and its relation to fitness context***

Historically, the frequency and duration of customers use of a particular service have been linked to the concept of repeat buying (Bodet, 2008) and have been described as an action behaviour that serves as one of the indicators of behavioural loyalty (Dick & Basu, 1994). In the context of the sport and fitness industry specifically Ferrand et al. (2010) defined frequency of attendance as "the average number of visits a customer makes to the (fitness) club each week" (p.90). Although Ferrand et al. (2010) supported the view that frequent visitation does indeed represent a form of behavioural loyalty, their study suggested that the impact of frequency on intention to repurchase a service requires further empirical evidence. In addition, MacIntosh and Law (2015) suggested that the reasons for the decision to maintain or cancel membership are different from those that determine whether or not someone engages in physical activity.

Recent studies in the sport and exercise context (e.g. Verplanken & Melkevik 2008; Jekauc et al. 2015) have emphasised the importance of acknowledging participation frequency for better understanding of habitual behaviour and predicting future attendance. However, theories used to explain physical activity behaviour, namely theory of planned behaviour (Ajzen, 1991); social cognitive theory (Bandura, 2004); health action process approach (Schwarzer, 2001); and physical activity maintenance

theory (Nigg et al., 2008), do not take into account the repetitive nature of behaviour associated with physical activity participation and in particular in general fitness exercises. Yet, over the last decade, the UK health authorities such as the National Institute for Health and Care Excellence (NICE) have increasingly focused their attention on behaviour change and encouraging physical activity (National Institute for Health and Care Excellence, 2015). This is reflected in the national recommended levels of physical activity (Department of Health, UK, 2011) which are expressed in terms of duration, intensity and frequency of activity for different demographical groups.

Similarly, other research evidence suggests that customer service evaluations do not exist statistically, but change over time under the influence of a customer's experience (Bolton & Lemon, 1999; Dagger & O'Brien, 2010; Jiang & Rosenbloom, 2005). It was found that longer-term customers tend to base their evaluations more on credence qualities (i.e. more complex to evaluate service attributes), while novice customers are more likely to base evaluation on search qualities (i.e. easy to evaluate service attributes) (Dagger & Sweeney, 2007). Also, customers who had more time to acquire the necessary information and knowledge about a service tend to evaluate the service experience, its benefits and outcomes more holistically than those who had less time with an organisation (Dagger & O'Brien, 2010). Moreover, due to differences in knowledge and experience levels, novice and experienced customers may assign different weights to service attributes (Alba & Hutchinson, 1987; Bodet, 2006) and have perceptions of quality, satisfaction and loyalty from the standpoint of their stage of consumption (Mittal & Katrichis 2000).

A study by Avourdiadou and Theodorakis (2014) on customers of sport and fitness centres showed that the relationship between overall service quality and satisfaction is

significant for both novice and experienced customers; however, the impact of satisfaction is significantly greater among experienced customers. It has also been found that in early consumption stages customers tend to rely more on their cognitive judgements in developing behavioural intentions. Alongside Oliver's (1993) idea that overall service quality appraisals do not require extensive experience with the firm, Avourdiadou and Theodorakis (2014) support the notion that novice customers rely on a less complex scheme to evaluate service quality and to develop future behaviours.

Unlike previous research, in this study we do not consider usage from an 'experience' perspective. The focus of the study is on the frequency of usage and specifically on regular users. This is because those who utilise sports facilities on a regular basis are better placed to provide informed opinions about service quality compared with irregular users.

### ***Key research questions***

Analysis of previous literature identified the lack of distinction between fitness activities when measuring perceptions of service quality in multipurpose sport facilities. Our study addresses this gap in literature and investigates customers' perceptions towards service quality in gyms as a distinct sporting setting in public sports centres. Previous literature notes that due to neoliberalisation of the delivery system responsible for promotion of sports participation (Stenling, 2014), sport facilities may have inconsistent influence on sport participation or its associated outcomes for users. In particular, this applies to public sector facilities which prioritise targeted programming to all market segments over higher standards of quality. This study recognises a challenging act for public sport facilities in terms of controlling cost and achieving their objectives (Kumar et al., 2018) and, therefore, it seeks to obtain insights on delivered

service quality from their most sustained users, with a specific focus on gym goers. The research questions were set out as follows:

- 1) What do regular users of gyms identify as the priority elements of service quality?
- 2) How does importance attached by regular gym users to different service quality elements compare with their evaluation of performance of those elements?
- 3) Which service elements are most closely related to overall perceived service quality in regular gym usage?

## Methods

### *Participants*

The respondents were the users of gyms from twelve public sports centres who had attended a sports centre within the past three months (12 weeks). In total, 349 respondents self-reported to be regular users of gyms, of whom 140 were males (40%) and 209 were females (60%). The mean age across the sample was 41.4 years. The final usable sample size per facility ranged between 6 and 54 and therefore the analysis presented in this paper is based on the aggregate sample obtained across all 12 facilities.

### *Instruments*

The questionnaire was set up to measure the customers' perceptions of regular customers (those who use a sports centre at least once a week) about gyms. For this, respondents were asked to specify the frequency with which they used a gym within a particular facility. Demographic information including gender and age was also collected. A set of questions on 17 items from the adapted model (Table 1) was designed to measure performance and importance of service quality attributes (i.e. 34 questions in total).

## Table 1

The set of questions related to performance of service quality attributes were asked using the 10-point Likert scale, with 'Strongly Disagree' as 1 and 'Strongly Agree' as 10. The set of questions about the importance respondents assign to the attributes were also asked using 10-point Likert scale with 'Not Important at all' as 1 and 'Very important' as 10. Importance-performance analysis offers a number of benefits, namely: evaluation of customer acceptance, identification of areas where resources may be overused and increase in usefulness of strategic decision-making (Martilla & James, 1977). Difference between performance and importance scores, known as gap analysis, was recommended for use in fitness and leisure industry (in public sports centres in particular), due to its acceptability among practitioners, its simplicity and tested validity (Liu et al. 2009). In industry, Sport England (2017) utilises gap analysis in National Benchmarking Service (NBS) which is a set of authoritative performance indicators and national benchmarks used for public sports and leisure centres. Respondents in our study were also asked about their overall perception of service quality in the gym, using the 10-point Likert scale, with 'Very poor' as 1 and 'Excellent' as 10; the same number of points on the scale was used for the consistency with performance and importance measures.

A questionnaire developed by Ko and Pastore (2005) for the Scale of Service Quality in Recreational Sport (SSQRS) was used as a basis for this study for three reasons. Firstly, it provides consolidation of concepts which build on general service quality models (Brady & Cronin, 2001; Dahholkar, Thorpe, & Rentz, 1996); secondly, it is contextualised to recreational sport; and thirdly, it offers a tool for measurement of outcome as a part of perceived service quality. The outcome dimension of quality is closely linked to the value/quality co-creation process and its inclusion to the model is

aligned with the 'service-dominant' logic. In the case of the fitness context, outcome is related to the physical and psychological benefits of exercise, social interaction and general feelings towards the service (Ko & Pastore, 2005; Lagrosen & Lagrosen 2007).

The original model by Ko and Pastore (2005) included four primary dimensions defined by several corresponding sub-dimensions: 1) programme quality - range of programme, operating time, and information, 2) interaction quality - client-employee integration and inter-client interaction, 3) outcome quality - physical change, valence, and sociability, and 4) environment quality - ambient condition, design and equipment. The questionnaire instrument for Ko and Pastore's (2005) model had a total of 49 items (questions). In order to adapt Ko and Pastore's (2005) existing questionnaire to the fitness context of gyms, a series of consultations took place with the business development managers of the sport centres included in this research. On the basis of relevance, questions related to program quality dimension were excluded from the questionnaire. Items under the sub-dimension of range of programme were not applicable to the context of gyms; they also had items (e.g. variety and wide range) that could cause semantic saturation (i.e. repetition) when used twice, i.e. for importance and performance. Information about gyms was provided by sport centres through the same channels and in a similar manner which classifies information provision as part of wider sports centre operations rather than exclusive characteristics of fitness areas that could have an immediate impact on customer perceptions in this context. Operating time items were excluded as they represent a part of wider sports centre operations. Questions about the design of the facility (physical environment quality) were also excluded, whereas questions about physical change (outcome quality) were extended to questions on both physical and psychological benefits (Lagrosen & Lagrosen, 2007).

In order to minimise additional marketing/survey communications to sport centres' customers, distribution of the online questionnaire had to strategically coincide with sport centres' annual customer satisfaction survey. The questionnaire design had to allow customers to complete the survey in 10-15 minutes to maximise the response rate. This timing could not have been achieved with the use of the original questionnaire in Ko and Pastore's (2005) model as it had a total of 49 items (questions). Inclusion of performance-importance questions for each of the items meant doubling the number of questions which increase the possibility of incomplete questionnaires. After consultations with sport centres, the adapted model (specifically focused on the context of gyms) included three dimensions - physical environment quality, interaction quality and outcome quality - and seven sub-dimensions (Table 1). The adapted model provided a set of comparable dimensions and it matched to the requirements of the organisations in terms of managing customer expectations as well as eliminated semantic saturation which allowed designing the questionnaire of a reasonable length.

### ***Data collection***

Data was collected from the users of twelve public sports centres in Northern England, which are managed by the same trust. The population of the study involved regular member customers who have been attending a sports centre over past three months prior to data collection. Frequency of attendance was defined by Ferrand et al. (2010) as "the average number of visits a customer makes to the (fitness) club each week" (p.90). Thus, in the context of the study frequency was defined in terms of a self-reported number of visits to gyms per week. The target population included member customers who reported that they attended a gym in a sports centre at least once a week. This is in line with Jekauc et al.'s (2015) study which indicated that in the period of 20 weeks



regular attenders exercised on average 1.55 times in the first week with no significant change in participation rate over the next 19 weeks, indicating that they maintained their physical activity at a comparable level. The following criteria were used to include users of sport centres in the study: 1) being a member; 2) attendance at gym over the past three months prior to data collection; 3) regular attendance: once a week or more frequently (self-reported).

A random sampling technique was used to select individual respondents for the study. After filtering the database according to the first two criteria (possession of membership and attendance over the past three month), the selection of 9444 customers was randomised by the first letter of their surname and half of the original selection (i.e. 4722) was included in the sample. As frequency of attendance was a self-reported measure, the last stage of respondent selection in line with the third criterion (i.e. regular attendance) was only possible to implement after the survey had been completed by the respondents. Overall, 680 surveys were completed via an online survey; of these, 349 responses were included in the analysis because they were completed by regular users (i.e. using the gym once a week or more often).

### ***Data analysis***

The data analysis was conducted using SPSS (version 24). Item-level performance and importance scores for service quality were first calculated for the sample of regular gym users. The internal consistency and reliability of the service quality scale used was tested using Cronbach's alpha prior to further analysis. For all three service quality dimensions, Cronbach's alpha coefficients for both performance and importance exceeded the 0.7 minimum threshold suggested by Nunnally and Bernstein (1994). Cronbach's alpha coefficients for five of the seven service quality sub-dimensions also

exceeded 0.7 for both performance and importance and were greater than 0.5 in all cases. Therefore, the service quality scale used was deemed to have satisfactory reliability.

The item-level scores were averaged to produce mean sub-dimension and dimension level scores for both performance and importance. In order to identify the priority elements of service quality for regular gym users, differences between the seven importance sub-dimensions and between the three importance dimensions were assessed using a repeated-measures ANOVA and Bonferroni-adjusted post-hoc comparisons. The assumption of equal variance was assessed via Mauchly's test of Sphericity and, if violated ( $p < 0.05$ ), a Greenhouse-Geisser correction applied. A Pearson correlation was run to determine the relationship between customers' assessment of the performance of different elements of service quality and the importance that they attached to them. Gaps between mean performance and importance scores were calculated and tested for being significantly different from zero using a one-sample t-test. Finally, the association between the relative performance of service quality sub-dimensions (i.e. performance-importance gaps) and overall perceived service quality in gyms was assessed through Pearson correlation coefficients and a multiple regression analysis was conducted to examine the level of influence of the sub-dimensional performance-importance gaps on users' overall service quality perception.

## Results

The mean importance scores for each sub-dimension are presented in Figure 1. A repeated measures ANOVA determined that the mean importance scores differed statistically significantly between sub-dimensions ( $F(6, 2088) = 417.949, p < 0.001$ ). Post hoc tests using the Bonferroni adjustment revealed that the importance score for 'equipment' was significantly higher than all other sub-dimensions ( $p < 0.01$ ) with the

exception of 'valence', whereas 'sociability' had a significantly lower importance score across all sub-dimensions ( $p < 0.001$ ).

#### Figure 1

When the sub-dimension scores were combined to derive importance scores for the three dimensions, a similar significant result was obtained ( $F(2, 696) = 218.151, p < 0.001$ ). The mean importance score for physical environment quality ( $8.96 \pm 1.20$ ) was significantly higher ( $p < 0.001$ ) than the corresponding scores for interaction quality ( $8.16 \pm 1.43$ ) and outcome quality ( $7.59 \pm 1.41$ ). The mean importance score for interaction quality was also significantly higher than that for outcome quality ( $p < 0.001$ ).

Figure 2 plots the mean importance scores for all sub-dimensions (on the horizontal axis) against their corresponding mean performance scores (on the vertical axis). The axes intersect at the mean importance and performance scores across all sub-dimensions, 8.14 and 7.67 (out of ten) respectively, resulting in four quadrants.

#### Figure 2

Five of the seven sub-dimensions, including two relating to outcome quality, one relating to interaction quality and both of the physical environment quality sub-dimensions, are positioned in the top right quadrant. These sub-dimensions have relatively high importance and performance scores. By contrast, one sub-dimension relating to interaction quality and one relating to outcome quality feature in the bottom left quadrant, by virtue of having relatively low importance and performance scores. The upward slope of the trend line in Figure 2 is illustrative of a strong linear relationship between the sub-dimension level importance and performance scores,

which is verified by a large positive and statistically significant Pearson correlation coefficient ( $r = 0.97$ ,  $p < 0.001$ ).

An alternative approach to comparing importance with performance is using gap analysis. The gaps between the mean performance and importance scores for each sub-dimension are shown in Figure 3.

Figure 3

Six of the seven sub-dimensions exhibit negative gaps, meaning that importance exceeded performance for these sub-dimensions i.e. a quality deficit. The only exception was 'sociability' for which there is a positive gap, indicating that performance is better than importance for this sub-dimension i.e. a quality surplus. A one-sample t-test confirmed that the gap scores for each sub-dimension were statistically significantly different than zero ( $p < 0.01$ ). The sub-dimension level gap analysis patterns were replicated at item level. For example, both items relating to 'sociability' had a quality surplus whereas both items relating to 'equipment' had a quality deficit.

The mean score for overall perceived service quality for regular users of gyms was 8.38 (out of ten). Bivariate correlation analysis with Pearson correlation coefficient showed that there were significant associations between the performance-importance gaps for five of the seven sub-dimensions and overall perceived service quality in gyms - see Figure 4.

Figure 4

The sub-dimensions with the strongest significant associations with overall perceived service quality were 'ambience' and 'equipment'. In the multiple regression analysis, the

seven service quality sub-dimensions were treated as the independent variables and the overall perceived service quality was treated as the dependent variable. The independent variables in the regression model were expressed in terms of their respective performance-importance gaps (i.e. quality surplus or deficit). Tolerance statistics for the independent variables ranged from 0.7 (ambience) to 0.95 (sociability) and Variance Inflation Factor scores were between 1.06 (ambience) and 1.43 (sociability), indicating that there was no multicollinearity between them. The regression model was statistically significant ( $F(7, 340) = 30.234, p < 0.001$ ) and 38.4% of the variance in overall service quality was explained by the seven service quality sub-dimensions. Only 'ambience' ( $B=0.307, t=6.816, p < 0.001$ ) and 'equipment' ( $B=0.304, t=6.229, p < 0.001$ ) were statistically significant predictors of overall perceived service quality. None of the other sub-dimensions contributed significantly to the predication ( $p > 0.05$ ).

#### Discussion

Fitness services require physical interaction between the provider and the customers, and fitness-services operations are complex (Chelladurai, Scott, & Haywood-Farmer, 1987) and distinctive (Chang & Chelladurai, 2003). It is therefore important that fitness-services providers understand what their customers' wants are, what their customers understand by service quality and how service quality influences their evaluations.

The first aim of our study was to investigate which elements of service quality are prioritised by regular users of gyms. Our analysis illustrates that physical environment was the most important according to users, with the 'equipment' being generally more important than all other sub-dimensions of quality. This finding is consistent with previous literature which suggested that physical environment is the key element of provision in leisure service settings and in the context of fitness services in particular. In

particular, Afthinos et al. (2005), Alexandris et al. (2004) and Lentell (2000) emphasised the importance of the physical environment quality in forming positive perceptions of fitness services. The evidence from the study by Liu et al. (2009) carried out across 72 public sport facilities in England demonstrated that physical evidence is the most important factor: 60% of customers assigned high importance to the physical evidence and only 7% placed relatively higher importance on the non-physical evidence.

Although the use of gym equipment has historically been one of the primary reasons for attending a gym, only few studies focused on the important role of equipment in fitness centres. For example, a recent study of fitness centre users in Thailand by Yusof et. (2018) suggested that if a gym had new and modern variety of equipment, customers were more likely to renew their membership and recommend the gym to others. Indeed, the nature of exercising in a gym and using equipment in particular relates to what Motschieder (2015) called 'a temporary creation of own perceived space' (p. 188). Due to the fact that temporarily individualised space forms the essential part of a workout, any disturbances to it could be considered undesirable. This can create a potential conflict between different groups in a gym, i.e. in the pursuit of individualising space temporarily, some users may monopolise individual pieces of equipment by overusing them (i.e. continuously training single body parts), whereas others may monopolise pieces of equipment by underusing them (by chatting and socialising) (Andrews et al., 2005).

Several studies advocated the inclusion of an outcome quality or benefits in the service quality model (Alexandris et al., 2004; Howat et al., 2008; Lagrosen & Lagrosen, 2007). In our study outcome as a whole was relatively less important to users compared with

physical environment and interaction. However, this finding was due to the fact that 'sociability' had the lowest importance score across all sub-dimensions. Perhaps 'sociability' was seen as a by-product of gym-going rather than an intended integral part of service. The fact that users of gyms seek to secure their 'temporarily owned' space in gym during their workout (Motschiedler, 2015) rather than look for shared experiences suggests that 'sociability' is not seen as a desirable outcome by users of gyms; yet this may differ depending on the type of the facility and customers' motivations. With regard to this point, Hill and Green (2012) argued that socialising opportunities become less of a reason for driving repeat participation at fitness facilities for regular users. According to Stebbins (2007), more regular users of facilities engage in serious leisure (as opposed to casual leisure); they are more motivated and more satisfied with the benefits of their participation and do not require opportunities to socialise. Thus, differentiation between users who are engaged in serious leisure and those who participate in activities on casual basis is required to adequately address issues related to sociability and inter-client interaction.

Brady and Cronin (2001) introduced the sub-dimension of 'valence' within an outcome quality, which was meant to explain the attributes determining a customer's perceptions of the service (good or bad outcome), regardless of their evaluation of any other aspect of the experience. Previous literature (Smith et al., 2014; Tian-Cole & Crompton, 2003) suggested that factors which are outside of the service itself (and therefore falling under the definition of the 'valence' sub-dimension) can include a customer's physique, the weather, nostalgia, escape or socialising. Thus, the purpose of the 'valence' sub-dimension was to capture the influence of the 'unknown' factors within a service quality model (Polyakova & Mirza, 2015). Our study illustrates that 'valence' had the second highest importance score after 'equipment'.

The second aim of the study was to investigate the difference between importance assigned by gym users to the service elements and users' evaluation of actual performance of those elements. Our study showed that there is a strong linear relationship between the sub-dimension level importance and performance scores. This means that sub-dimensions with relatively higher importance scores had higher performance scores, whereas sub-dimensions with relatively lower importance scores also had relatively lower performance scores. Alongside this, importance scores were by and large higher than performance scores, which resulted in negative difference between performance and importance (i.e. a quality deficit) in all sub-dimensions except 'sociability'.

The largest quality deficit was found to occur in the 'ambience', 'valence', and 'equipment' sub-dimensions. These sub-dimensions also had relatively high importance scores. In relation to ambience, Liu et al. (2009) established that "dirty facilities have a strong negative impact on customer satisfaction, although when the facilities are clean, it does not have a strong effect on customer satisfaction because it is considered to be a basic requirement or norm" (p.250). Liu et al.'s (2009) study also found that the largest gap was related to cleanliness.

Smith et al. (2014) argue that if customers exercise for fitness and are motivated by body or appearance-oriented reasons, their physique plays an important role in attaining key benefits and satisfaction. Smith et al.'s (2014) results showed that the customers' comfort with their own physique negatively mediated the relationship between staff interaction quality and outcome attainment. They argue that customers might be continuously, consciously or unconsciously, comparing themselves to other customers on their physique. Yet, the comparison to a fit, good-looking member of staff can



trigger the mechanism of upward social comparison, especially if the individual aims to improve their physique and appearance (see Festinger, 1954). The theory of social comparison explains the process of an individual comparing themselves to another person on a specific criterion and perceives that they are inferior in that area. Another explanation of dissatisfaction with attainment of one's fitness goals as well as with personal achievement comes from overestimation of self-control levels (Garon et al., 2015); when individuals fail to consistently maintain control over their initial decision towards exercising and a healthy lifestyle. Delays, procrastination and lack of willpower link to the circle of self-inflicted negative emotions, which ultimately, result in negative perceptions of personal performance and service overall (Pedragosa et al., 2015).

The third aim of the study was to explore the relationship between areas of perceived service quality and overall perceived quality for regular users. Our findings indicate that how regular gym users perceive the relative performance of physical environment quality is a key determinant of their overall service quality perception of gym usage.

Despite having the largest quality deficit (together with 'valence'), the two sub-dimensions of physical environment, 'ambience' ( $r = 0.53$ ) and 'equipment' ( $r = 0.50$ ), were found to have the strongest associations with overall perceived quality and the multiple regression analysis indicated these sub-dimensions statistically significantly predicted overall perceived service quality. This finding is consistent with Alexandris et al. (2004) and Smith et al. (2014) who found that the physical environment quality has a significant influence on satisfaction. In addition, Liu et al. (2009) argued that aspects of the physical environment quality (i.e. cleanliness and facility quality) present weaknesses in the industry and require separate attention from the facility managers. Hill and Green (2012) found that cleanliness positively influences participation at

fitness facilities. This can be explained by the fact that having greater experience of a facility, regular participants are aware of the "hygiene issues surrounding these types of facilities and appreciate the cleanliness of such facilities rewarding managers with increased use" (Hill & Green, 2012, p.215).

Previous studies on service quality suggested that customers can be making evaluations either on the basis of their most recent transaction-specific experiences or on the basis of on all the purchase experiences disregarding any specific purchase experience (Boulding et al., 1993; Oliver 1993; Parasuraman et al. 1994; Tam, 2004). In a gym context, it becomes practically impossible to identify the impact which recent service encounters have had on customers' judgements. The challenge comes from the ambiguity related to two following questions: 1) how long ago a service encounter should have happened to stop influencing customer's cumulative evaluation of quality in any particular way; and 2) whether positive service encounters have potential to influence customer's perceptions to the same extent/with the same strength as negative service encounters. In this study, 'ambience' and 'equipment' are the only tangible dimensions amongst all other dimensions of quality, and both of them have the strongest association with overall perceived service quality. This 'tangibility' makes the 'ambience' and 'equipment' the most visible and, therefore, most accessible aspects for customers to evaluate. This fact allows us to make an assumption that overall perceived service quality is based on the collection of significant and memorable service experiences and clear lasting impressions of those experiences.

#### Limitations and future research

There were several limitations to our study. Firstly, we used a self-reported measure of attendance frequency in gyms as there was no common attendance monitoring data

available across sport centres in the sample. Also, there were some restrictions around sampling (i.e. only those who attended sport centres over the past 3 months were included). Having more objective and complete measures of attendance can improve the limitations of data collection. Secondly, findings of our study suggest that 'valence' had the second highest importance score after 'equipment' and our study was not set out to explore the reasons for the relative importance attached by customers to 'valence'. Therefore, in order to gain insight into the reasons behind the respondents' scores, it could be useful for future studies to categorise the unknown influences into several groups, for example: a) mood; b) whether customers take a passive or active position in the co-creation of service quality (Schembri & Sandberg, 2011); c) their level of self-awareness; and d) the nature of their motivations (e.g. intrinsic/extrinsic) (Thatcher, Thatcher, Day, Portas & Hood, 2009).

Another area which deserves further attention is service quality perceptions of irregular users. Our study has focused exclusively on evaluation of service quality from the perspective of regular users. Therefore, future studies need to examine whether there are any significant differences in perceptions between regular and irregular users in gyms.

Finally, our research measured perceived service quality in fitness suites in Northern England, hence the results may have limited generalisability due to the differences in demographics across the UK. Future studies may pursue an exploration of service quality in other geographical regions to compare their results to our findings and can contribute through measuring perceptions of customers who participate in non-equipped fitness provision (e.g. fitness classes).

## Conclusion

Our study found that 'ambience' and 'equipment' were perceived by regular gym users to be among the most important aspects of quality. They were also found to have the strongest association with users' overall perceived service quality in gyms. These findings provide implications for managers of sports facilities who should closely monitor quality in physical environment within gyms and implement remedial measures where required.

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Table 1. Adapted Hierarchical Model of Service Quality for Fitness

<b>Dimensions</b>	<b>Sub-dimensions</b>	<b>Items</b>
Interaction Quality	Client Employee Interaction	knowledgeable and professional fitness staff; friendly staff; staff who are always willing to help
	Inter-Client Interaction	other customers having a positive impact on the experience; other customers' respect for the rules and regulations
Outcome Quality	Physical Change/Benefits	improving personal fitness; increasing fitness level; psychological benefits; increasing skill level
	Valence	to achieve what I want; to have a good feeling
	Sociability	opportunities for social interaction; making friends
Physical Environment Quality	Ambience	workout area is clean and well maintained; enjoying the atmosphere
	Equipment	variety of fitness equipment; condition of the equipment

Figure 1. Mean importance scores by sub-dimension

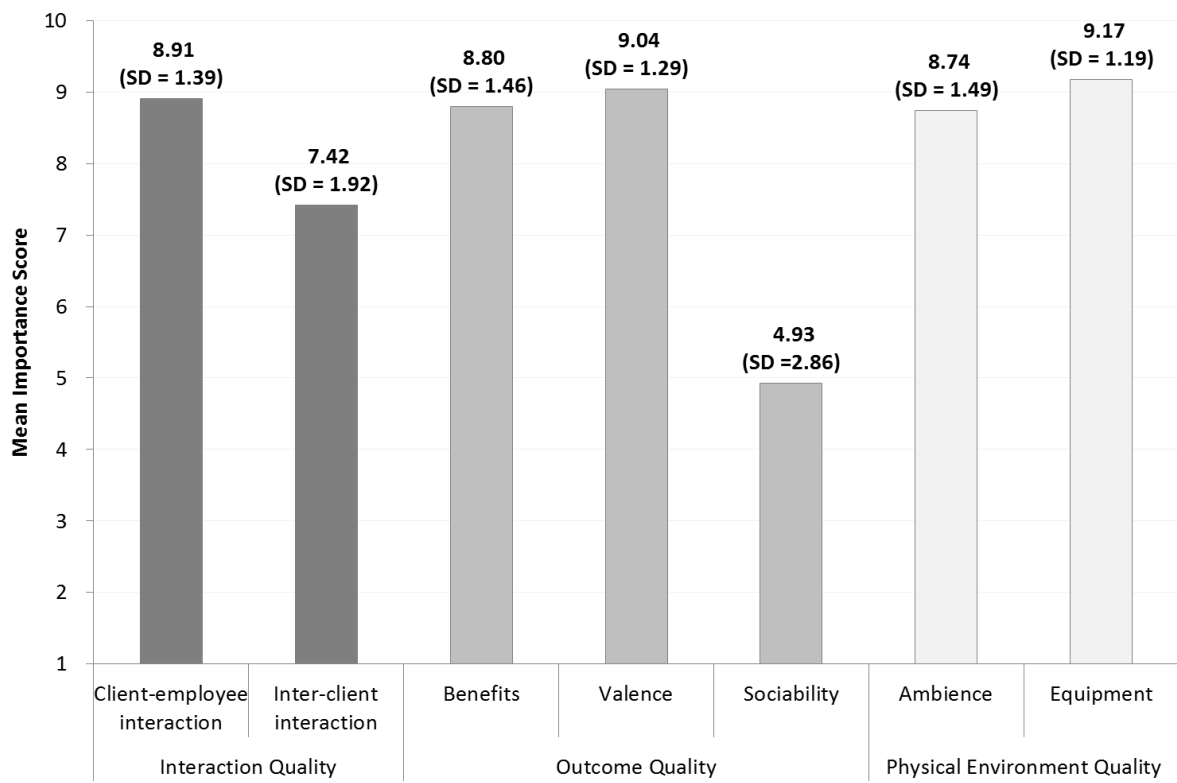


Figure 2. Importance-performance matrix

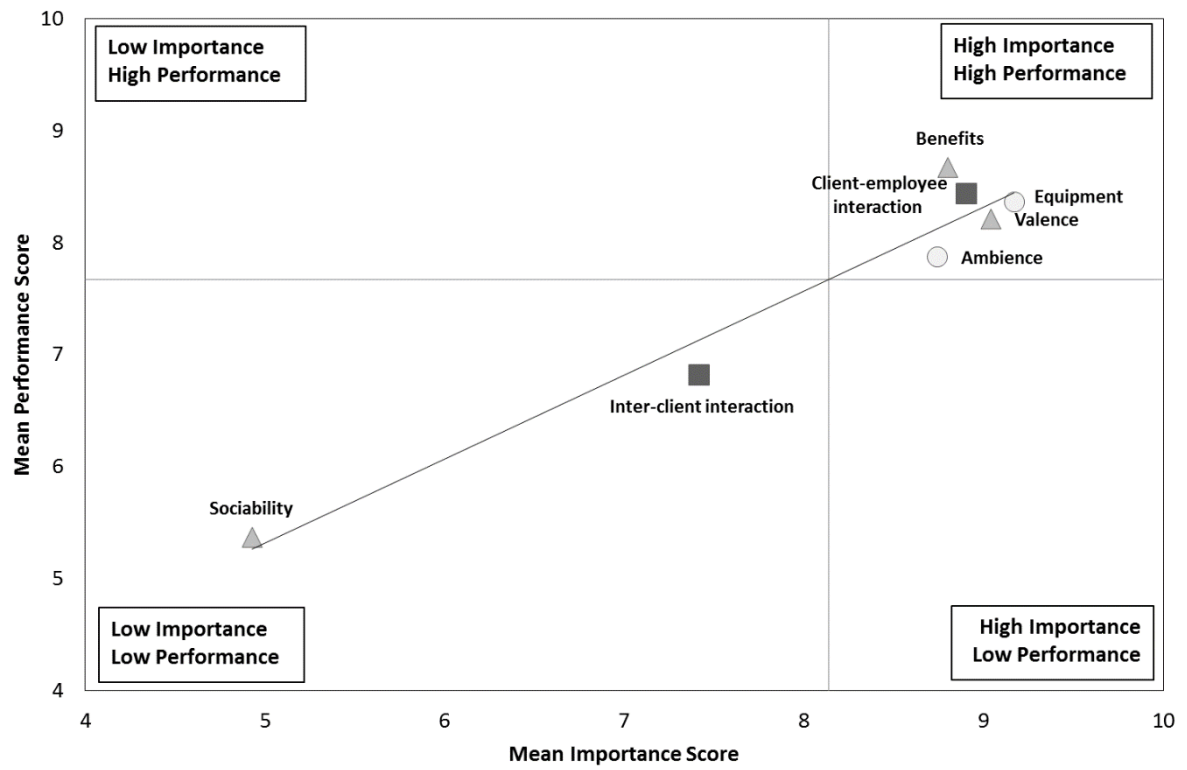




Figure 3. Performance-importance gap analysis

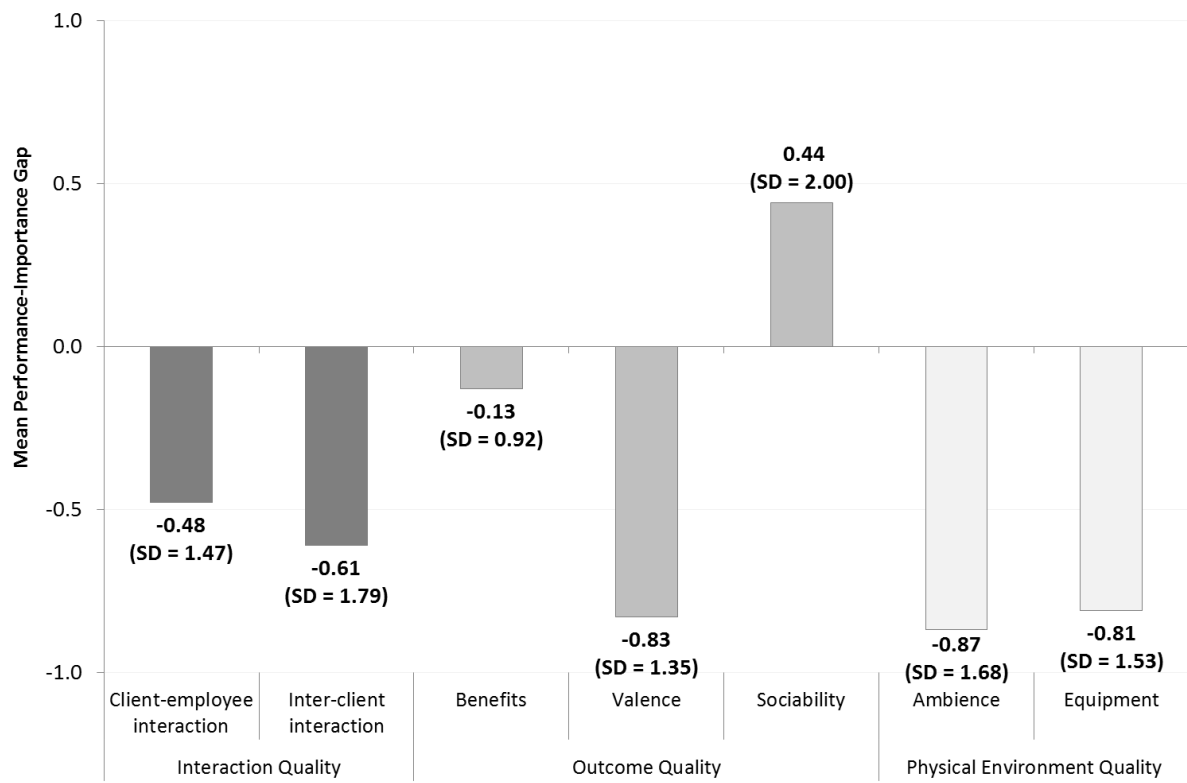


Figure 4. Correlation between performance-importance gap and overall perceived quality in gym

