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Building Brand Image and Customer Satisfaction Among Female Patrons: Winning Formula for Boutique Fitness Centres in Malaysia

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ABSTRACT

The purpose of the study is to investigate the significance of service quality dimensions, investigate their influence on brand image, customer satisfaction, and loyalty, and uncover the interconnections among these factors among female customers of boutique fitness centres in Malaysia. The data collected through a self-administered online questionnaire from 192 female respondents were analysed through PLS-SEM. The findings highlight the importance of assurance in assessing service quality for female segments. It reveals that women prioritise relationship-building, service quality, and safety. The brand image of boutique fitness centres significantly mediates the relationship between service quality and satisfaction among female customers, even though service quality has no direct impact on satisfaction. Furthermore, the brand has no significant influence towards customer loyalty. This study offers fresh insights into the service quality of boutique fitness centres, explicitly focusing on the female segment and examining its relationship with brand image, satisfaction, and loyalty. It contributes to the theoretical and empirical literature concerning service quality, brand image, customer satisfaction, and loyalty within the context of female customers of boutique fitness centres in Malaysia. Future studies could explore qualitative research and additional variables in this context.

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1.0 INTRODUCTION

The holistic concept of 'fitness' involves pursuing optimal physical health and energy levels, encompassing social and biological adaptability, including flexibility, muscular strength, and cardiovascular health. This has propelled the growth of a thriving fitness industry, spanning gyms, health clubs, spas, and more, offering diverse services, programmes, and equipment (Addolorato et al., 2022). The industry's rapid expansion, influenced by healthy lifestyle trends and increased health awareness, has become especially pronounced post-pandemic, where the paradigm of medical fitness has gained prominence (Deloitte, 2020; Pa et al., 2019; Rada & Szabo, 2022).

In Malaysia, heightened awareness has led to a significant expansion in fitness centres, with the market growing by 9.5% annually since 2014, reaching US\$200.69 million in 2017 (International Health, Racquet and Sportsclub Association, 2019). The digital fitness and wellbeing segment is projected to reach US\$271.30 million in 2023 (Statista, 2023). The evolving fitness landscape includes diverse facilities, reflecting a cultural shift towards holistic wellness and digital fitness (Yong, 2019; Statista, 2023).

Boutique fitness centres, trending in Europe, offer specialised, community-oriented exercise experiences, leveraging strategic positioning, tailored services, and competitive pricing globally (Batrakoulis, 2019; Crabbe, 2018; Tan, 2020; Tsitskari et al., 2021; Anderson et al., 2021; Bharathi & Dinesh, 2018; Mathew et al., 2021). The surge in women's participation, constituting 32.2% of health club memberships, underscores the need for the fitness industry to adapt to their specific needs (IHRSA, 2021).

Global trends reveal varying preferences among women, such as in Greece, where group activities like Yoga, Zumba, and weight training dominate, and in the USA, where women's health consciousness drives investment in boutique fitness centres (Tsitskari et al., 2021). In India, rising female interest is influenced by more female trainers, shaping 45% of gym memberships (Makhija, 2020).

Amidst global shifts towards greater health awareness among women, limited research exists on active Malaysian women's fitness participation determinants (Ibrahim et al., 2013; Hanlon et al., 2019). The ascendancy of the service industry necessitates exceptional service quality and a strong brand image for competitiveness and customer loyalty (Srivastava & Sharma, 2013). As the fitness business intensifies, particularly in the female segment, superior service quality and robust branding strategies become imperative (Dam & Dam, 2021; Lagrosen & Lagrosen, 2007; Chong et al., 2020).

The relevance of service quality in shaping customer perceptions and behaviours is well-recognised (Parasuraman et al., 1985; Khoo, 2022). Positive correlations between service quality, customer satisfaction, and loyalty are evident across industries (Anwar et al., 2019; Dimiyati & Subagio, 2016; Wu et al., 2011). While studies on the fitness industry are abundant, those explicitly focusing on the female segment are scarce.

This paper seeks to address this gap by exploring the service quality of Malaysian boutique fitness centres, explicitly targeting the female segment, and examining its correlations with brand image, satisfaction, and loyalty (Yong, 2019). As the industry navigates the impacts of COVID-19, understanding and elevating service quality in boutique fitness centres becomes crucial for sustained growth (Hornbuckle, 2019; Chayomchai & Charnarpas, 2021). Thus, the study aims to achieve the following research objectives:

- i. To determine the importance of each service quality dimension among the female users of boutique fitness centres in Malaysia.
- ii. To explore the impact of service quality on brand image, customer satisfaction, and customer loyalty among the female users of boutique fitness centres in Malaysia.
- iii. To discover the relationships between brand image, customer satisfaction, and customer loyalty among the female users of boutique fitness centres in Malaysia.

Prior research delves into service aspects across various industries (e.g., retail, tourism, hospitality, healthcare). Our study pioneers by investigating service quality determinants and their impact on brand image, customer satisfaction, and loyalty among female patrons in Malaysian boutique fitness centres. Unlike previous works, we explore these dimensions and analyse the mediating role of brand image, particularly among women. This aligns with Malaysia's health promotion agenda for females in sports (Ministry of Health, 2020; Ministry of Youths and Sports, 2016), potentially augmenting fitness management and government initiatives. Our research aims to uniquely contribute to understanding service dynamics in boutique fitness contexts.

2.0 LITERATURE REVIEW

Service quality has taken centre stage in service marketing, spurring the creation and evolution of various models to comprehend customer needs. Divergent researchers have developed multiple frameworks of service quality models across sectors, offering varying views on its essence.

2.1 Perceived Service Quality

Parasuraman et al. (1985) define it as the gap between customer perceptions and expectations involving exceptional service. Grönroos (1984) identified functional and technical quality dimensions shaping overall service quality (Ramya et al., 2019), revealing multifaceted perspectives on quality. Functional quality evaluates service delivery, while technical quality gauges outcomes based on interactions (Grönroos 1984, 1988). Later, the model evolved to include the image dimension (Akhtar, 2011; Rahman et al., 2012). Subsequently, Rust & Oliver (1994) introduced service environment, service delivery, and service product dimensions, though their application remained limited (Ghotbabadi et al., 2015).

2.2 SERVQUAL

Parasuraman et al. (1985 & 1988) introduced the SERVQUAL (Service Quality) tool within the Gap Model of Service Quality Theory, facilitating an understanding of customers' perceptions of service quality by evaluating the alignment of their expectations with actual experiences (Parasuraman et al., 1988). Initially comprising five dimensions—assurance, responsiveness, empathy, tangibility, and reliability—SERVQUAL faced debates on its applicability. Dam and Dam (2021) questioned its suitability for retail and found varied results in the supermarket sector.

Despite debates, SERVQUAL has been extensively employed in diverse sectors such as banking (Ramya et al., 2019), healthcare (Kitapci et al., 2014), dining (Wu, 2014), and the fitness industry (Cardona, 2018; Kim & Kim, 2005; Soita, 2012; Albayrak et al., 2016; Chong et al., 2020). The fitness industry's dimensions have been adapted to suit boutique fitness centres (Thanabordeekij, 2018; Soita, 2012; Chong et al., 2020; Šima et al., 2020; Xu et al., 2021).

For boutique fitness centres, tangibility is linked to the physical appearance, fitness programmes, well-equipped facilities, and appropriately dressed personnel. Responsiveness focuses on personnel attitude, punctuality, and prompt service. Reliability pertains to accurate service performance, meeting customer needs, and fulfilling promises. Assurance involves conveying confidence, expertise, and trust through personnel knowledge, courtesy, and safety. Empathy emphasises personalised attention and customised services to address unique customer needs (Peitzika et al., 2020; Gill et al., 2019).

Though Peitzika et al. (2020) found 'responsiveness' not applicable, Gill et al. (2019) supported its use in investigating customer satisfaction. Chong et al. (2020) employed SERVQUAL to gauge Gen-Y satisfaction in Malaysia. Jasinskas et al. (2016) highlighted its unique ability to provide comprehensive service quality information, demonstrating its utility across sectors. In the context of female patrons in Malaysian boutique fitness centres, SERVQUAL is essential as boutique fitness centres are relevant in service-intensive settings and closely tied to experiential factors.

2.3 SERVPERF

Cronin and Taylor (1992) introduced SERVPERF as an improvement upon SERVQUAL, exclusively focusing on perceived service performance for measuring quality. Acknowledged for its reliability and diagnostic insights, SERVPERF surpasses SERVQUAL (Dam & Dam, 2021). While SERVQUAL suits product-oriented companies, SERVPERF is optimal for service-focused businesses like electronic goods retailers (Mehta et al., 2000; Al Khattab & Aldehayyat, 2011).

Retaining SERVQUAL's five dimensions, SERVPERF excludes customer expectations, considering them consistently high (Polyakova & Mirza, 2016). Despite criticism, SERVQUAL is globally accepted and evolved, but SERVPERF gained preference (Brown et al., 1993; Babakus & Boller, 1992; Wong et al., 2011; Lim et al., 2022). In 2020, SERVPERF was adopted as SERVGYM assessed fitness service quality, offering insights into gym settings (Bandyopadhyay, 2016). Yet, it overlooks boutique fitness centres, prompting a comprehensive service performance model for evaluating quality perception among the female segment in Malaysia. SERVPERF is analytically relevant in the context of boutique fitness centres because the model provides a leaner, more performance-driven evaluation and complements the limitation of SERVQUAL, as it could determine if perceived quality differences are rooted in unmet expectations or underwhelming performance (Dam & Dam, 2021).

2.4 Brand Image

The brand image encapsulates the beliefs tied to an object, shaped by personal experiences and external inputs (Subaebasni et al., 2019; Ismuroji et al., 2023). Scholars define it as abstract qualities residing in consumers' memories about a brand (Grubor & Milovanov, 2017; Lim et al., 2022). Over time, the role of brand image in marketing management has been recognised, guiding strategies using models like Kotler's brand perceptions (Kotler & Keller, 2016). Recent research at Gold's Gym Bekasi, Indonesia, in 2020 underscores the positive correlation between service quality and the fitness centre's brand image (Pantjoro, 2020). This highlights the significant role of service quality in shaping brand perceptions in the fitness industry (Alguacil et al., 2022).

2.5 Customer Satisfaction

Satisfaction encompasses an emotional or cognitive evaluation of consumption (Brown et al., 2016). Scholars define it as an object's affective reaction or a pleasant feeling derived from comparing expectations with performance (Luo et al., 2019). Cardozo (1965) and Churchill & Suprenant (1982) argue for satisfaction as a global construct, supported by Kotler (1994) as pleasure or disappointment from actual vs. expected product performance. Bolton and Drew (1991) propose service quality as a satisfaction antecedent, countered by Cronin and Taylor (1992). Pradeep et al. (2020) emphasise assessing service quality for customer satisfaction, with fitness centres' context linking quality and environment to satisfaction (Alexandris et al., 2004).

2.6 Customer Loyalty

Customer loyalty signifies actions ensuring a business's sustainability, as Oliver (1997) defines it as a deep-seated desire for continuous repurchases influenced by marketing and social pressures. Loyal customers, endorsing repurchases and advocating for the company (Zeithaml et al., 1996), hold significant marketing value. Oliver's (1997) "belief-attitude-conation model" classifies loyalty into behavioural and attitudinal aspects. Lee et al. (2000) highlight the importance of prioritising loyalty improvement for financially strained sports centres over acquiring new customers. In challenging times, emphasising repurchasing, the core of loyalty, is a more effective strategy for struggling businesses.

2.7 Hypotheses Development

Parasuraman's concept of service quality, defined as customers' overall impression of service superiority or inferiority (Parasuraman et al., 1988), aligns with other perspectives. Researchers associate service quality with meeting customer expectations or needs, highlighting provider adaptability (Chakrabarty et al., 2008). Dam and Dam's (2021) study on a Vietnamese supermarket affirms the positive impact of service quality on brand image, customer satisfaction, and loyalty.

Similar findings in catering services (Hsieh et al., 2018) and the established role of service quality as a brand image precursor (Wu et al., 2011) support its influence on customer satisfaction and loyalty. In the fitness industry, service quality consistently affects loyalty (Alexandris et al., 2004; Lee et al., 2000; Theodorakis et al., 2014). Positive perceptions drive satisfaction (Cronin & Taylor, 1992), influencing customer loyalty, particularly in fitness centre atmospheres, impacting return visits (Pantjoro, 2020). The interdependence of satisfaction and loyalty in gym services (Bandyopadhyay, 2016) underscores the pivotal role of service quality. Hence, we propose the following hypotheses:

H1: Service Quality has a positive impact on Brand Image.

H2: Service Quality has a positive impact on Customer Satisfaction.

H3: Service Quality has a positive impact on Customer Loyalty.

Past studies affirm brand image's positive impact on customer satisfaction and loyalty in diverse sectors such as medical insurance (Wu et al., 2011), supermarkets (Neupane, 2015), banking (Anwar et al., 2019), and retail stores (Ismuroji et al., 2023). Koo (2003) highlights the influence of brand image on loyalty, equity, and purchase patterns. Cretu and Brodie (2007) note that while reputation may create an umbrella brand, image is category-specific. In the fitness industry, as in other sectors (Chao, 2015), a favourable brand image significantly elevates customer satisfaction and loyalty (Neupane, 2015; Ismuroji et al., 2023), playing a crucial role in attracting and retaining satisfied customers and ensuring long-term business success (Nguyen et al., 2024). In service-driven contexts like boutique fitness centres, brand image captures not only functional perceptions but also emotional and symbolic associations that resonate particularly with female patrons. This aligns with previous studies suggesting that brand image strengthens the perceived value of service delivery and enhances customer trust, loyalty, and word-of-mouth intention (Dam, 2020; Ferreira et al., 2019). Hence, we hypothesise:

H4: Brand image positively influences Customer Satisfaction.

H5: Brand Image positively influences Customer Loyalty.

Service quality significantly shapes customer satisfaction and loyalty (Wicaksono & Aprianingsih, 2016). Russell et al. (2007) argue that customer satisfaction precedes brand intention and loyalty post-service experiences. Loyalty, a repeated commitment to favoured products or services (Oliver, 1997), is vital for long-term relationships, profitability, and repurchase (Reichheld & Sasser, 1990). The literature consistently links loyalty and satisfaction, with satisfaction as an affective antecedent to loyalty (Dick & Basu, 1994; Sri Hayatia et al., 2020). Studies affirm that satisfaction positively impacts loyalty (Fornell et al., 1996; Musa, 2005). Bandyopadhyay's (2016) study in India highlights a positive correlation between customer satisfaction and gym loyalty, a relationship extensively studied in the fitness industry (Bandyopadhyay, 2016). Hence, we hypothesise:

H6: Customer Satisfaction positively influences Customer Loyalty.

Prior studies highlight the necessity for tailored service quality models (Brady et al., 2002; Ladhari, 2009; Martinez & Martinez, 2010). Several models crafted explicitly for the fitness sector (Kim & Kim, 2005; Chang & Chelladurai, 2003; Lam et al., 2005; Yildiz, 2011) accommodate diverse customer expectations. Yildiz's recent investigation (2021) into Turkish females' preferences in boutique fitness centres underscores a demand for socialisation, desired physical changes, and certified trainer programmes. Meanwhile, Malaysian boutique fitness centres attract clientele through specialisation, competitive pricing,

and strategic locations (Yong, 2019). The diverse models addressing varied expectations (García-Fernández et al., 2018; Polyakova & Mirza, 2016; Quismondo et al., 2020) necessitate a standardised service quality approach. Our proposed conceptual framework, informed by the literature review, aims to bridge the understanding gap in Malaysian women's participation in the fitness industry, as depicted in Figure 1.

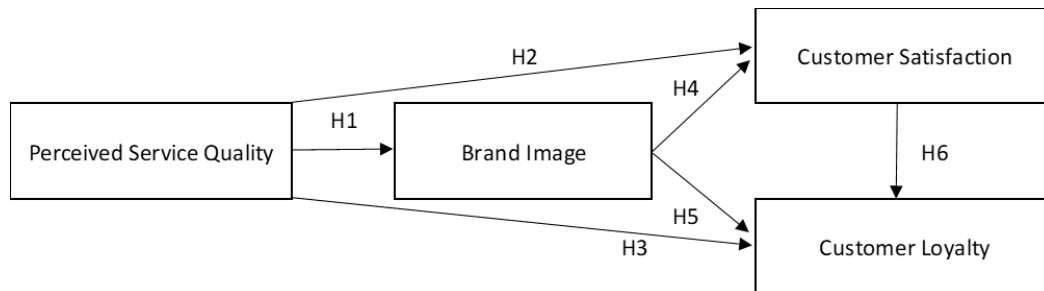


Fig 1. Proposed Conceptual Framework

3.0 METHODOLOGY

Following the positivism paradigm that Wong et al. (2011) advocated, this study adopts a quantitative approach to analyse the conceptual framework outlined in Figure 1. Utilising survey questionnaires, the research systematically explores participant perspectives and firsthand experiences with boutique fitness centres in Malaysia.

3.1 Survey Instrument and Constructs Operationalisation

The survey instrument was methodically developed using a deductive approach, synthesising insights from varied literature domains encompassing service quality, branding, and consumer behaviour. The questionnaire employed in this study utilised a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Aligned with the study's conceptual framework, key constructs are expounded as follows:

Service Quality:	The company's ability to grasp customer demands and meet expectations through service excellence.
Brand Image:	Customers' interpretation of a brand, encapsulating distinct connections and opinions.
Customer Satisfaction:	An evaluation of contentment with a company's offerings, services, and competencies.
Customer Loyalty:	A lasting emotional bond leading to repeated purchases from the company, reflecting allegiance.

3.2 Sampling Method and Data Collection

This study collected crucial data from participants through a well-structured questionnaire. Information was gathered using purposive sampling to address research inquiries, selecting samples from a specific population based on distinctive attributes or qualifying criteria (Cavana et al., 2001). While this non-probability sampling method is appropriate for exploratory and context-specific research in this study of female patrons in boutique fitness centres, it inherently limits the generalisability of the findings to the broader population. The sample may not fully capture the diversity of consumer experiences across different demographic or geographic groups. The researcher's judgment identified individuals most relevant to the research objectives. The target sample size, calculated using G*power 3.1.9.4 software ($f^2 = 0.15$,

alpha = 0.05, predictors = 4, power = 95%), was 129, aligning with recommendations by and Hair et al. (2017) for structural analysis. An invitation with a QR code linked to the online questionnaire was distributed to 32 boutique fitness centres across six major regions in Malaysia to invite female patrons aged 18 and above to participate voluntarily in the study.

Table 1. Sources of measurement items

Constructs	Items	Sources
Tangibility	T1 – T4	Cronin & Taylor (1992)
Reliability	REL1 – REL5	Cronin & Taylor (1992)
Responsiveness	RES1 – RES4	Cronin & Taylor (1992)
Assurance	A1 – A4	Cronin & Taylor (1992)
Empathy	E1 – E5	Cronin & Taylor (1992)
Brand Image	BI1 – BI4	Lien et al. (2015); Dam & Dam (2021)
Customer Satisfaction	CS1 – CS4	Orel & Kara (2014)
Customer Loyalty	CL1 – CL4	Orel & Kara (2014)

3.3 Data Analysis

A total of 200 samples were collected in June and July 2022. Post-filtering and data cleansing, 192 respondents were considered for analysis. Descriptive analysis, facilitated by IBM SPSS® Statistics Version 29, characterised participants and emphasised service quality dimensions among female users in Malaysian boutique fitness centres. Exploring the impact of consumers' emotional states on impulsive buying behaviour utilised SmartPLS 4.0.8.8. PLS-SEM was chosen for its robustness in handling collinearity and data distribution. These analytical approaches yielded valuable insights in line with the study's objectives (Malhotra, 2021).

4.0 EMPIRICAL RESULTS

4.1 Background of the Respondents

Table 2 delineates the demographic features of 192 female respondents affiliated with boutique fitness centres in Malaysia. The predominant age group was 41-50 (34.5%), followed by 31-40 (31.5%). Geographically, the majority resided in Sarawak (30.5%), Pahang (16.5%), and Kuala Lumpur (15.5%). Education-wise, 38% possessed a bachelor's degree, 22.5% had certificates/diplomas, and 21% held SPM qualifications or below. Employment distribution included 41.5% in the private sector, 23% in the public sector, and 13.5% self-employed. Over 50% earned RM1,500 to RM5,999, and 54.5% were married. Primary fitness programme choices were Zumba (105), Strength training (52), and High-Intensity Interval Training (HIIT) (48). Attendance frequency varied, with 27% twice a week, 26% once a week, 20% thrice a week, 18.5% five or more times a week, and 8.5% four times a week.

4.2 Descriptive Statistics of SERVPERF Constructs

Refer to Table 3, Assurance has the highest mean value (6.234±0.651), suggesting the most critical service quality factor among the female patrons of boutique fitness centres in Malaysia. Items about 'customer relationship' and 'safety' (i.e., A2, A3) were among the highest mean values (6.328±0.845, 6.318±0.677, respectively). On the contrary, Empathy (4.902±1.056) is perceived as the least essential service quality driver, relatively. While operating hours and customer-centric behaviour (5.141±1.806, 5.016±1.774 respectively) are essentials in driving empathy, 'personal attention' (4.677±1.700) was perceived to be the least essential service quality that will influence female patrons in joining a boutique fitness centre.

Table 2. Demographic profiles of the respondents

Construct		Frequency	Percentage (%)
Age	20 years old and below	4	2.0
	21 to 30 years old	28	15.5
	31 to 40 years old	62	31.5
	41 to 50 years old	66	34.5
	51 to 60 years old	28	14.0
	61 years and above	4	2.5
State of Origin	Federal Territory of Kuala Lumpur	29	15.5
	Federal Territory of Putrajaya	3	1.5
	Federal Territory of Labuan	1	0.5
	Selangor	26	13.0
	Sarawak	58	30.5
	Pahang	31	16.5
	Johor	12	6.0
	Penang	4	2.0
	Sabah	11	6.0
	Kedah	1	0.5
	Negeri Sembilan	1	0.5
	Terengganu	3	1.5
	Perak	4	2.0
	Kelantan	6	3.0
	Malacca	2	1.0
	Perlis	0	0.0
Highest Education Level	SPM and below	39	21.0
	Certificate/ Diploma	44	22.5
	Bachelor's degree	72	38.0
	Master's degree	31	15.5
	Doctoral Degree	4	2.0
	Others	2	1.0
Occupation	Student	13	6.5
	Homemaker	19	9.5
	Employee of the Public Sector	43	23.0
	An employee of the Private Sector	80	41.5
	Unemployed	5	2.5
	Own Business	26	13.5
	Retiree	5	3.0
	Other	1	0.5

Gross Income	RM0	18	9.0
	RM1 – RM1,499	19	10.0
	RM1,500 – RM2,999	31	18.0
	RM3,000 – RM4,499	39	19.5
	RM4,500 – RM5,999	27	13.5
	RM6,000 – RM7,499	12	7.0
	RM7,500 – RM8,999	20	10.0
	RM9,000 and above	26	13.0
Marital Status	Single	68	35.5
	Married	105	54.5
	Separated	1	0.5
	Divorced	15	8.0
	Widowed	3	1.5
Types of Fitness Programmes	Yoga	26	14.5
	High-Intensity Interval Training (HIIT)	48	25.0
	Water Fitness	6	3.5
	Kickboxing	15	7.5
	Spinning/Indoor Cycling	12	6.0
	Strength Training	52	26.5
	Total Resistance Exercise (TRX)	11	5.5
	Zumba	105	55.0
	Pilates	16	8.0
	Bootcamp	10	5.0
	Muay Thai	8	4.0
	Aerodance	37	19.5
	Circuit Training	22	11.0
	CrossFit Training	17	8.5
	Others	8	4.0
Frequency to the Boutique Fitness Studio	Once per week	50	26.0
	Twice per week	53	27.0
	Thrice per week	39	20.0
	Four times per week	17	8.5
	Five times/ more per week	33	18.5

Table 3. Mean and standard deviation scores for SERVPERF constructs

Construct	Mean	Std Deviation
Tangible (T)	5.837	0.836
T1 The studio facility is up to date (i.e., equipment/tools/programmes).	5.578	1.238
T2 The studio facility is visually appealing.	5.661	1.191
T3 The studio staff/instructors are well-dressed/neat.	6.057	0.928
The appearance of the physical facilities of the studio is consistent with the fitness image.	6.052	0.891
Reliability (REL)	5.856	0.775
REL1 The studio can meet its promised time frame for response to the customers.	5.849	1.035
REL2 The studio is reliable, and customers can count on the staff when there is a problem.	5.901	0.872
REL3 The studio is dependable, and it provides the right services to the customers.	5.969	0.874
REL4 The studio has maintained the equipment and service with minimum error.	5.854	0.938
REL5 The studio keeps an accurate record of the customers.	5.349	1.101
Responsiveness (RES)	5.387	1.361
RES1* There is no need to let customers know exactly when the service will be performed. by the staff/instructors (i.e., notifying customers in advance of class cancellation)	5.635	1.843
RES2* It is not reasonable to expect prompt service from the staff/instructors.	5.005	1.826
RES3* The staff/instructors do not always have to be willing to help the customers.	5.557	1.482
RES4* It is ok for the staff/instructors to be busy to respond immediately to a customer's request/complaint.	5.349	1.633
Assurance (A)	6.234	0.651
A1 The staff/instructors are trustworthy and equipped with the skills and knowledge to perform their responsibilities.	6.099	0.952
A2 The customers should feel safe when dealing with instructors/equipment.	6.318	0.677
A3 The staff/instructors are being friendly to the customers.	6.328	0.845
A4 The staff/instructors should get full support from the studio when performing their jobs well.	6.193	0.903
Empathy (E)	4.902	1.056
E1* There is no need for the studio to give each customer personalised attention.	4.844	1.671
E2* It is not practical to expect staff/instructors to understand the needs of a customer fully	4.833	1.651
E3 The studio has staff/instructors who provide customers with personal attention.	4.677	1.700
E4* It is unreasonable to expect staff/instructors to have the best interests of the customer at heart.	5.016	1.774
E5* It is not necessary for the studio to have operation hours convenient to all customers.	5.141	1.806

Note: * Negatively connotated items. The scores have been reversed for better comparisons.

4.3 Hypotheses Testing

The data underwent scrutiny for suspicious response patterns, following Hair et al. (2022) criteria: 1) straight-lining, 2) diagonal lining, and 3) alternating extreme pole responses. Out of 200 collected responses, eight were excluded for inconsistent patterns, resulting in 192 for statistical analysis. G*Power software determined the sample size (192) was adequate for the research model ($f^2 = 0.02$, $\alpha = 0.05$, power = 0.80, seven predictors). Concerns about standard method variance or bias (CMV or CMB) were addressed using the whole collinearity technique (Kock & Lynn, 2012; Kock, 2015) (refer to Table 4), confirming no significant CMB threat with VIF values below 5 (Hair et al., 2022).

Table 4. Full collinearity testing

Construct	Service Quality	Brand Image	Customer Satisfaction	Customer Loyalty
VIF	1.002	1.342	3.314	3.108

4.4 Partial Least Square Structural Modelling (PLS-SEM)

The two-step PLS modelling procedure was chosen for its efficacy in predictive models and handling formative measurement scales (Sarstedt et al., 2022). This study, aligning with the framework of Liengaard et al. (2021), aimed to predict customer loyalty, fitting PLS-SEM's causal-predictive paradigm (Sarstedt et al., 2022). Operationalising the higher-order construct (Service Quality) as a reflective-reflective second-order model justified PLS-SEM use, especially for its distributional assumption-free nature (Hair et al., 2022). Statistical analysis, performed with SmartPLS 4.0.8.8 software (Ringle et al., 2022), followed the 2-step approach: 1) measuring the outer model for construct reliability and validity, and 2) assessing the significance of hypotheses in the structural model, as proposed by Anderson and Gerbing (1988).

4.5 Measurement Model Assessment

Service Quality, as per Parasuraman et al. (1985) and Cronin and Taylor (1992), is appraised through SERVPERF's five dimensions—Tangibility, Reliability, Responsiveness, Assurance, and Empathy—indicating a reflective-reflective higher-order construct. Adopting Sarstedt et al.'s (2022) two-stage approach, Stage I involved modelling reflective lower-order constructs. Evaluating the reflective measurement model encompassed assessing indicator reliability, internal consistency reliability, convergent validity, and discriminant validity (refer to Tables 5 and 6). Four items (E3, E5, CS4 and CL3) with low loadings (<0.4) were removed. In Stage II, latent scores from Stage I were indicators for the higher-order construct, Service Quality (refer to Tables 6 and 7). Factor loadings for Tangibility, Reliability, and Assurance exceeded 0.708, affirming indicator reliability. Service Quality exhibited satisfactory AVE (0.739) and CR (0.895), meeting the criteria for convergent validity and reliability. Discriminant validity was confirmed by HTMT ratios. Overall, the research models met measurement criteria (Hair et al., 2022).

4.6 Structural Model Assessment

The structural model underwent scrutiny following the validation of the measurement model, using key criteria such as path coefficients, standard errors, t-values, p-values, confidence intervals, and effect sizes. A 10,000-sample re-sample bootstrapping procedure was employed for hypothesis testing, aligning with Hair et al. (2022) and other scholars (Becker et al., 2025; Hahn & Ang, 2017; Sarstedt et al., 2022). It was also critical to ensure that the inner model was free from multicollinearity issues, which was assessed using the Variance Inflation Factor (VIF) values. Specifically, the VIF value for the Service Quality in relation to Brand Image was 1.000. For Customer Satisfaction, the VIF values were 1.020 for both Service Quality and Brand Image. Regarding Customer Loyalty, the VIF values were 1.023 (Service Quality), 1.454 (Brand Image), and 1.448 (Customer Satisfaction). Since all values were below the recommended threshold of 3.3 (Diamantopoulos & Siguaw, 2006), multicollinearity was not a concern.

Table 4 shows the result of hypothesis testing, with all hypotheses accepted except H2 and H5. Notably, Service Quality exhibited a positive relationship with Brand Image ($\beta = 0.140$, $p = 0.002$) and Customer Loyalty ($\beta = 0.064$, $p = 0.012$), supporting H1. Customer Satisfaction is also significantly related to Service Quality ($\beta = 0.548$, $p < 0.001$) and Customer Loyalty ($\beta = 0.774$, $p < 0.001$), affirming H4 and H6 (refer to Table 8). Contrary to expectations, Service Quality ($\beta = 0.047$, $p > 0.05$) did not have a significant effect on Customer Satisfaction, and Brand Image ($\beta = 0.070$, $p > 0.05$) did not significantly influence Customer Loyalty, resulting in the rejection of hypotheses H2 and H5.

Table 5. Measurement model for the first order constructs

First Order Constructs	Items	Loadings	CR	AVE
Assurance	A1	0.711	0.855	0.598
	A2	0.778		
	A3	0.862		
	A4	0.734		
Empathy	E1	0.866	0.861	0.677
	E2	0.885		
	E4	0.705		
Reliability	REL1	0.811	0.904	0.653
	REL2	0.783		
	REL3	0.891		
	REL4	0.825		
	REL5	0.721		
Responsiveness	RES1	0.897	0.855	0.602
	RES2	0.730		
	RES3	0.856		
	RES4	0.582		
Tangibility	T1	0.836	0.873	0.632
	T2	0.731		
	T3	0.775		
	T4	0.834		
Brand Image	BI1	0.894	0.951	0.829
	BI2	0.918		
	BI3	0.930		
	BI4	0.900		
Customer Satisfaction	CS1	0.918	0.953	0.870
	CS2	0.942		
	CS3	0.938		
Customer Loyalty	CL1	0.932	0.943	0.847
	CL2	0.941		
	CL4	0.888		
Service Quality (Second order)	Assurance	0.862	0.895	0.739
	Reliability	0.859		
	Tangibility	0.859		

Note: E3, E5, CS4, CL3, Empathy, and Responsiveness were deleted due to low loadings.

Table 6. Discriminant validity (HTMT) for the first order constructs

Constructs	1	2	3	4	5	6	7	8
1. Assurance								
2. Brand Image	0.480							
3. Customer Loyalty	0.625	0.553						
4. Customer Satisfaction	0.735	0.597	0.891					
5. Empathy	0.275	0.052	0.132	0.141				
6. Reliability	0.721	0.517	0.732	0.755	0.088			
7. Responsiveness	0.376	0.084	0.121	0.157	0.758	0.080		
8. Tangibility	0.652	0.510	0.585	0.623	0.119	0.841	0.113	

Table 7. Discriminant Validity (HTMT) for the Second Order Constructs

Constructs	Brand Image	Customer Loyalty	Customer Satisfaction	Service Quality
Service Quality	0.158	0.187	0.135	

In terms of predictive power, the R^2 values for Brand Image, Customer Satisfaction, and Customer Loyalty were 0.020, 0.309, and 0.682, respectively. This indicates that Service Quality accounted for 20.0% of the variance in Brand Image, while 30.9% of the variance in Customer Satisfaction was explained by both Service Quality and Brand Image. Most notably, the model explained 68.2% of the variance in Customer Loyalty, exhibiting substantial predictive power, based on Chin's (1998) guideline. Brand Image ($f^2 = 0.426$) demonstrated a strong effect on Customer Satisfaction, and Customer Satisfaction ($f^2 = 1.301$) in turn showed a strong effect on Customer Loyalty. The remaining relationships, however, demonstrated a relatively weak effect size that did not deserve scholarly or managerial attention.

Finally, the PLSPredict with a 10-fold procedure was run to assess the out-of-sample predictive power (Shmueli, et al. 2019) of the key endogenous construct, Customer Loyalty. The model showed a high predictive power ($Q^2_{predict} > 0$) and a high predictive relevance, as all errors of the PLS model were lower than those of the LM model (see Table 9). Overall, the study's structural model met rigorous standards, providing valuable insights into the dynamics of service quality, brand image, customer satisfaction, and loyalty in boutique fitness centres.

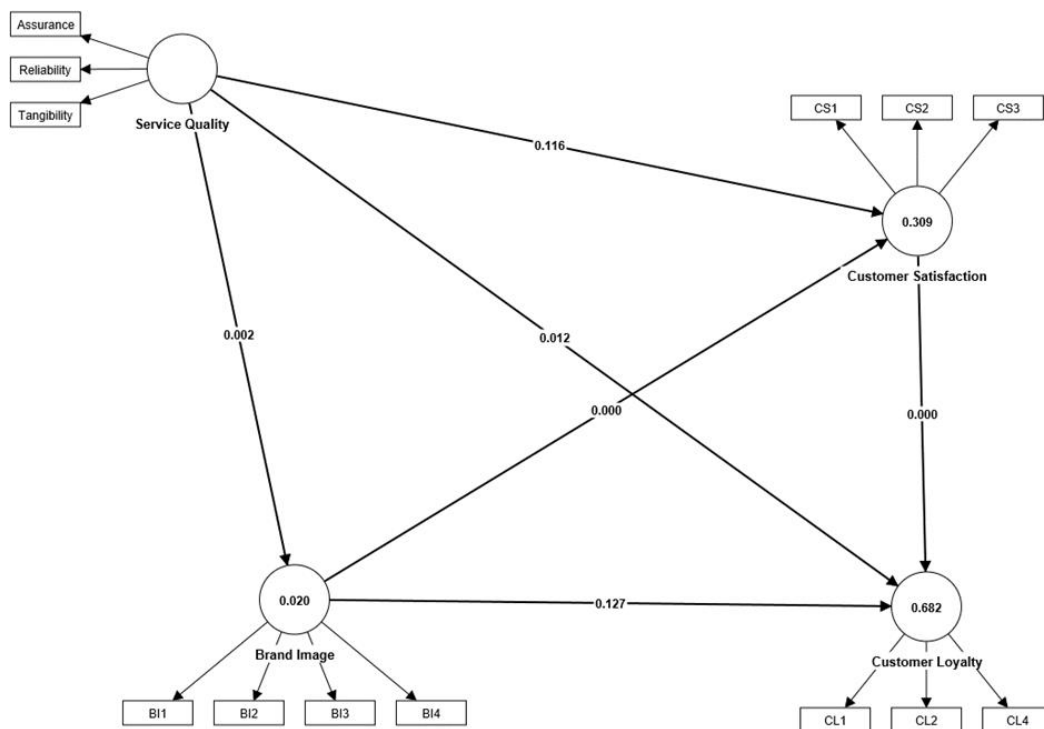


Fig. 2. Final Structure Model

Table 8. Hypothesis testing

Hypothesis	Std Beta	Std Error	t-values	p-values	BCI LL	BCI UL	Decision	R ²	f ²
H1 Service Quality -> Brand Image	0.140	0.048	2.946	0.002	0.052	0.208	Supported	0.020	0.020
H2 Service Quality -> Customer Satisfaction	0.047	0.039	1.193	0.116	-0.019	0.109	Not Supported	0.309	0.003
H3 Service Quality -> Customer Loyalty	0.064	0.028	2.271	0.012	0.018	0.111	Supported		0.013

H4 Brand Image -> Customer Satisfaction	0.548	0.105	5.210	0.000	0.348	0.702	Supported	0.426
H5 Brand Image -> Customer Loyalty	0.070	0.061	1.140	0.127	-0.021	0.180	Not Supported	0.682 0.010
H6 Customer Satisfaction -> Customer Loyalty	0.774	0.056	13.838	0.000	0.667	0.853	Supported	1.301

Note: 95% confidence interval with a bootstrapping of 10,000

Table 9. PLS-Predict

Items	Q ² predict	PLS	LM	PLS - LM
		MAE	MAE	MAE
CL1	0.021	0.617	0.629	-0.012
CL2	0.015	0.585	0.586	-0.001
CL4	0.011	0.627	0.632	-0.005

5.0 DISCUSSIONS

5.1 The Importance of Each Service Quality Construct among the Female Users of Boutique Fitness Centres in Malaysia

In the context of the booming fitness industry and the growing emphasis on healthy lifestyles, this study investigates boutique fitness centres using the SERVPERF model, with a focus on female members. The findings underscore the pivotal role of assurance in evaluating service quality for female patrons, aligning with prior research by León-Quismondo et al. (2020) and Baena-Arroyo et al. (2020). Females engaging with boutique fitness centres prioritise relationships, services, and safety, demonstrating distinctions from their male counterparts. Contrary to previous studies emphasising the importance of empathy for both genders (Baena-Arroyo et al., 2020; León-Quismondo et al., 2020; Chong et al., 2020; Peitzika et al., 2020), this study reveals that females place less emphasis on personalised attention, potentially indicating a preference for independent workouts and self-reliance in achieving fitness goals (Thompson, 2019).

5.2 The Impact of Service Quality on Brand Image, Customer Satisfaction, and Customer Loyalty among the Female Patrons of Boutique Fitness Centres in Malaysia

This study unveils a significant positive correlation between service quality, brand image, and customer loyalty in Malaysian boutique fitness centres serving female clients. Service quality emerges as a robust predictor of brand image, indicating that prioritising service excellence contributes positively to brand perception and enhances female customer loyalty. The unique context of small business ownership in the fitness industry, where trainers own the participating centres, further amplifies this positive influence on the brand image (Pantjoro, 2020; Dam & Dam, 2021; Yildiz, 2021). Surprisingly, the current study evidences a contradiction with previous literature by not establishing a significant relationship between service quality and customer satisfaction among female clients in fitness centres. This unique finding may be attributed to the social and cultural dynamics embedded in the Malaysian context, where fitness activities are often experienced not just as individual pursuits but as socially embedded, collective engagements (Ogbeibu et al., 2020; Ferreira-Barbosa et al., 2022). In such settings, female clients may not evaluate their satisfaction solely based on traditional service quality dimensions such as responsiveness, reliability, or tangibles. Instead, their satisfaction may be more deeply rooted in the opportunities for social interaction, emotional support, and a sense of community fostered within the fitness environment.

This observation aligns with the principles of Social Capital Theory, which posits that social networks and the norms of reciprocity and trust embedded within them can influence individual behaviours and attitudes (Kaur et al., 2020; Ikhar et al., 2022). From this perspective, female clients may place greater value

on the shared experiences and mutual encouragement found in group classes, peer networks, or community-based fitness initiatives, viewing these elements as central to their overall satisfaction. These findings suggest that fitness centre operators aiming to enhance customer satisfaction among female clients may benefit from fostering social cohesion and group identity, rather than focusing solely on improving traditional service quality attributes. This shift in focus highlights the importance of cultural and gender-specific considerations in understanding customer satisfaction in service environments.

5.3 The Relationships Between Brand Image, Customer Satisfaction, and Customer Loyalty among the Female Users of Boutique Fitness Centres in Malaysia

The study unveils a substantial and positive connection between boutique fitness centre brand image and female customer satisfaction, implying that a positive perception of a fitness centre's brand image heightens satisfaction among female fitness enthusiasts. This could be attributed to the direct communication and intimate relationships between boutique fitness centre owners and their members (Gilboa et al., 2019). However, the absence of a direct influence of brand image on customer loyalty among female clients is particularly notable and calls for deeper exploration. These findings challenge conventional marketing assumptions, which typically position brand image as a key driver of loyalty. In the increasingly competitive fitness industry, especially in urban Malaysian contexts where fitness options are abundant, it appears that female customers may not form long-term loyalty based solely on brand perception. Instead, this underscores the growing importance of service differentiation, value alignment, and unique experiential offerings in fostering lasting customer relationships. Factors such as service quality, personalised experiences, emotional engagement, and responsiveness to individual preferences are likely to carry greater weight in shaping loyalty decisions (Xiong et al., 2020; Wang et al., 2022).

Interestingly, while brand image does not directly drive loyalty, it emerges as a critical mediating factor in the relationship between service quality and customer satisfaction. This suggests that for female clients, a positive brand image may enhance the perceived credibility or emotional resonance of the service, thus strengthening the satisfaction derived from it—even when the tangible elements of service quality are not rated highly on their own (Wang et al., 2022). This mediating role reflects the nuanced and multifaceted preferences of female fitness centre patrons, who may seek alignment between the brand's values (e.g., inclusivity, empowerment, wellness) and their own personal health goals. Therefore, brand image should not be overlooked, but rather strategically cultivated to reflect the deeper social and emotional needs of this demographic. Fitness brands that successfully communicate a sense of belonging, shared values, and community may find more success in fostering satisfaction and, indirectly, loyalty. This highlights the need for a more holistic approach to brand positioning—one that goes beyond aesthetics and messaging to encompass emotional relevance and lifestyle congruence for female customers.

5.4 Theoretical Implications

This study contributes to the theoretical and empirical understanding of service quality, brand image, customer satisfaction, and loyalty among female patrons in Malaysian boutique fitness centres. Notably, all five service quality dimensions were found to be significant, with reliability, tangibility, and assurance emerging as primary drivers of brand image, customer satisfaction, and loyalty. This contrasts with earlier literature, challenging the importance of responsiveness and empathy (Thanabordeekij, 2018; Bandyopadhyay, 2016). These distinct patterns among female customers are elucidated through Hofstede's Cultural Dimensions Theory, which emphasises the collectivist nature of Asian women and the societal emphasis on group loyalty (Jackson, 2020; Cherry, 2022).

5.5 Managerial Implications

The practical implications of these findings offer valuable insights for boutique fitness centre marketers and owners. Notably, emphasising reliability, assurance, and tangibility dimensions can significantly enhance brand image, customer satisfaction, and loyalty. Owners are advised to allocate resources

strategically, fostering a positive psychological experience for participants. Prioritising assurance and addressing female fitness enthusiasts' security needs contribute to boutique fitness centres' appeal as comfortable, inclusive, and welcoming spaces (Addolorato et al., 2022).

Recognising the socialisation aspect of fitness engagement among Malaysian women, especially in group activities like Zumba, suggests an innovative approach to programme development. Creating opportunities for socialising and networking can enhance members' experience, fostering enjoyment and a sense of community. Understanding the specific needs of the predominantly millennial, educated, and employed female demographic guides boutique fitness centres in tailoring services to meet their members' expectations. This study further advocates for refining the marketing mix, encompassing both tangible and intangible aspects, customer satisfaction, and retention to elevate service quality, brand image, and loyalty among female customers in the Malaysian fitness landscape.

6.0 CONCLUSION

While attempts were made to diversify questionnaire distribution in Malaysia, response rates from certain regions were notably low. Further research is warranted to attain a balanced representation across states. This approach would enhance comprehension of varied perspectives and preferences among boutique fitness patrons nationwide. Qualitative research, particularly focusing on Generation Y or millennials, could provide deeper insights into the unique needs and preferences of female fitness enthusiasts, contributing to a more nuanced understanding of their expectations and experiences. Future research could extend this model by incorporating demographic characteristics (e.g., age, income level, or fitness experience) and contextual factors (e.g., studio ownership type, pricing structure, or business model) to explore moderation effects. In addition, the present model assumes linear and direct relationships, with brand image serving as a simple mechanism. Future studies could adopt more advanced analytical techniques, such as structural equation modelling (SEM) or moderated mediation models, to investigate potential non-linear interactions, indirect pathways, and contingency effects. These extensions would enhance the explanatory power of the model and provide more granular insights for practitioners in the boutique fitness sector.

7.0 CONTRIBUTION OF AUTHORS

The authors confirm equal contribution in each part of this study. All authors reviewed and approved the final version of this work to be published.

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9.0 CONFLICT OF INTEREST STATEMENT

All authors declare that they have no conflicts of interest.

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