

The Utility of Attitudes and Observed Behaviour in Fitness Facility Retention

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ABSTRACT

While the positive health benefits of exercise are widely recognised, a lack of physical activity in many populations worldwide, combined with growing obesity-related health problems in both developed and developing countries, suggests that more needs to be done to understand the determinants of individual exercise choices. One industry where this is particularly relevant is the Fitness Industry, given an acute focus on encouraging consistent usage, creating positive experiences for users, and generating beneficial health and related outcomes. Fitness facilities are one component of the Fitness Industry, providing a setting for consistent engagement with exercise. To achieve and maintain physical health benefits associated with exercise, participation behaviour within such settings must be sustained (Hunter, et al., 2018).

Encouraging consistent exercise creates a complex issue for fitness centre providers, where member retention is typically low. This is despite constant reinvention of fitness facilities and their services, driven by industry and social trends, as well as customer preferences. Even with an increased focus on the creation and maintenance of high levels of customer satisfaction and service quality – both of which are emphasised as key determinants of ongoing customer commitment and loyalty (Murray & Howat, 2002; Tsitskari, et al., 2014) – member retention remains a constant focus in the industry. These complexities substantiate the need to further examine fitness facility member attitudes and behaviours. As a bridge, Social Cognitive Theory (SCT) offers an opportunity to consider the interaction of individual, environmental, and behavioural influences and their impact on member retention. The aim of this research is to examine the utility of attitudinal and behavioural determinants of member retention in the context of fitness facilities.

In current sport and leisure services literature, the issue of which specific determinants are most relevant to member retention is still contentious, with empirical studies not yet reaching a clear consensus. This is despite the clear importance of member retention to the financial performance and sustainability of fitness facilities. To gain a better understanding of retention and its determinants, this research: (1) replicates an existing conceptualisation by Howat and Assaker (2016), investigating the utility of this model to explain member retention; (2) expands this existing conceptualisation to empirically examine the utility of self-efficacy, self-reported attendance behaviour, and a multi-dimensional conceptualisation of loyalty to explain member retention; and, (3) empirically examines the utility of observed attendance behaviour to explain member retention.

Data was collected from a single fitness facility through multiple online questionnaires and behavioural data exported from the facility's data management systems over a twelve-month period. Data analysis techniques included Confirmatory Factor Analysis (CFA) and Partial Least Squares Structural Equation Modelling (PLS-SEM), which developed and tested the measures, constructs, and structural models. Analysis was conducted through three distinct research stages.

Findings of *Research Stage One* replicated Howat and Assaker (2016), validating four lower-order process quality and four lower-order outcome quality dimensions specific to the Fitness Industry. The replication of this model does not find a significant relationship between loyalty and retention as an outcome. *Research Stage Two* supported the inclusion of SCT influences (self-efficacy and self-reported attendance behaviour), and a multi-dimensional conceptualisation of loyalty as useful for delineating member retention. Specifically, structural model constructs explained 11.5% of variance in member retention, with a significant, but small effect size noted for the relationship between behavioural loyalty and member retention. Finally, *Research Stage Three* enhanced the utility of the model to

explain member retention through the use of observed attendance behaviour. Cumulatively, attitudinal and behavioural variables explained 18.7% of variance in member retention. In the final model, self-efficacy, attendance behaviours, process quality, outcome quality, satisfaction, value and behavioural loyalty (but not attitudinal loyalty) were important in the development of member retention, either directly or indirectly. Practically, while 18.7% is significant, and provides valuable understanding of key determinants, this does not deliver a complete view of the factors explaining member retention.

This research improves the utility of empirical models to explain member retention, enhancing understanding of exercise behaviour facilitation and maintenance in fitness facility settings. The findings of this research support the utility of behavioural data, and a need to prioritise the collection and evaluation of behavioural data (above attitudinal data) to effectively assess member retention. In line with an emerging focus on behaviour measurement within fitness centre settings (Yi, et al., 2020), the superior role of observed attendance behaviour to explain member retention suggests a transition away from the use of attitudes and intentions, which dominate existing theorisation (Ostrom, et al., 2015). Such transition will yield benefits to fitness facility practitioners and, indeed, to fitness members. Practically, findings provide evidence to support the development of strategies to leverage self-reported attendance behaviour, observed attendance behaviour, and behavioural loyalty as primary, direct drivers of retention. Therefore, this research provides practitioners with an improved understanding of the determinants of member retention and the role that they play in informing retention outcomes.

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DECLARATION

I hereby certify that this study is my own and contains no materials, which are published previously or has been accepted for the award of any other degrees or diplomas, except where the due references are made.

Angela Osborne edited this thesis. Angela only addressed the grammar, and not the thesis' substantive content. This study also met the requirements of Swinburne's Human Research Ethics Committee (SUHREC) in line with the National Statement on Ethical Conduct in Human Research, under SUHREC 2018/065.

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CHAPTER 1: INTRODUCTION

1.1 Background

The wider sport and leisure industry is multi-faceted, encompassing organisations that produce products and services for public spectatorship and consumption (i.e. professional sport events), as well as those that offer participatory experiences (Funk, et al., 2016). Within sport and leisure, the Fitness Industry offers participatory experiences to improve individual health, achieve lifestyle goals, and influence health-enhancing physical activity (World Health Organization, 2015).

Fitness, as an industry, contributes to efforts to combat obesity and chronic health disease (Australian National Preventive Health Agency, 2013). Physical activity has demonstrated associations with improved physical outcomes (e.g. cardiometabolic, musculoskeletal, functional performance) as well as mental health and wellbeing (Bennie, et al., 2018; Lee, et al., 2012; Penedo & Dahn, 2005; Warburton, et al., 2006; World Health Organization, 2010). These associations support the importance of physical activity providers (Haskell, et al., 2009).

The Fitness Industry has experienced growth in both size and influence (Weed, 2016). In Australia, the fitness sector operates over 4,450 facilities and centres (Youl, 2020) and is expected to generate revenue of \$2.3 billion in 2020–2021. These facilities include both private health and fitness centres as well as government funded community facilities (Whytcross, 2014). Further, a near constant reinvention of services is evident, influenced by industry and social trends, and myriad customer preferences (Maconachie & Sappey, 2013). Growing competition within the Fitness Industry necessitates the creation of differential value to attract and retain members.

Australian fitness facilities predominantly include health clubs, fitness centres, and gymnasiums, providing customers with a range of fitness and exercise-related services (Youl, 2020). These facilities are managed via different management formats including leasing, self-management, or contract management (Arthur, 2010). Contract management describes fitness facilities that are owned by local government authorities or councils and operated by commercial and community organisations who specialise in facility management (Arthur, 2010). This management format is central in the current research context, given that managed facilities represent a unique operational aspect of the industry.

Fitness services also provide specific service offerings, with customer options categorised as ‘discrete’ or ‘continuous’ (Liljander & Strandvik, 1995). Discrete services represent a repeated transaction, such as ‘pay as you go’ (Intel, 2011). Conversely, continuous services are ongoing contractual agreements, ending only via termination by the member. Continuous service relationships are dominant within the Fitness Industry, supplying 57% of industry revenue in the Australian context (Youl, 2020), which explains the importance of member retention. Retention is defined as a member continuing their service relationship (Bodet, 2012; San Emeterio, et al., 2016; Tahtinen & Halinen, 2002), and poses important financial implications for fitness organisations.

Despite an obvious need to attract and retain members, limited consensus exists to define and understand the factors leading to retention of fitness facility members. Attitudinal constructs, including service quality, satisfaction, and loyalty, are well established (Alexandris, et al., 2004; Cronin & Taylor, 1992; Howat, et al., 1996; Howat & Assaker, 2013; Howat & Assaker, 2016; Kim & Kim, 1995; Ko & Pastore, 2005; McDonald, et al., 1995; Milne & McDonald, 1999; Murray & Howat, 2002; Tsitskari, et al., 2014), and supported as important for the financial viability of leisure services (Dabholkar, et al., 2000; Howat & Assaker, 2013; Zeithaml, et al., 2009). However, the majority of research looks

only at attitudinal constructs to measure experience and intention. Therefore, there is a need and opportunity to progress toward the utility of behaviour to effectively understand member retention. This focus on behaviours is emerging within sport and leisure management more widely (George & Wakefield, 2018; Katz, et al., 2020; McDonald, 2010; Yi, et al., 2020), in particular for delineating retention as a defined outcome of loyalty (Dawes, 2009; East, et al., 2005). Within the fitness facility setting, recent research has provided initial support for the use of behavioural variables, but has suggested further advancements are necessary (Yi, et al., 2020).

The current research aims to advance existing research by examining the utility of attitudinal and behavioural determinants of member retention in a fitness facility context. As such, this research employs a deeper consideration of experiences and environments, as well as behaviours, as part of a longitudinal examination.

1.2 Research Context

Member acquisition and retention are imperative for the financial viability of fitness facilities, where revenue is largely provided by membership fees (Lam, et al., 2005; Reichheld & Sasser, 1990; Sawyer & Smith, 1999; Tsitskari & Tsakiraki, 2013). Member acquisition and retention have been an issue for Australian fitness facilities; existing empirical analyses are critical of observed ongoing poor financial performance (Howat, et al., 2005; Howat & Assaker, 2013; Howat & Crilley, 2007). While customer acquisition is a necessity for membership services, retention is generally a less costly strategy (Rosenberg & Czepiel, 1984), which impacts management practice (Yi, et al., 2019) and organisation financial performance (Fornell, 2007).

As a result, retention strategies are sought and developed by practitioners, and represent an increasing area of interest for empirical research (Yi, et al., 2020). Low retention

rates in the Fitness Industry see approximately 50% of individuals cease exercise at a given fitness facility within the first six months (Berger, et al., 2002). Mirroring trends in other service industries, the pressure to maintain viability has shifted focus towards aspects of experience management, in an effort to increase retention. These aspects include loyalty, satisfaction, and service quality – each of which has been prominently conceptualised and studied in past work. In addition, this research uniquely considers the role of self-efficacy and behaviour to enhance examination of member retention determinants.

The relationship between loyalty and retention in fitness contexts has been described as a “source of value creation” (Yi, et al., 2020, p. 2). Importantly, loyalty and retention are related but different constructs, with retention conceptualised as a loyalty outcome (East, et al., 2005). Most literature defines loyalty through self-reported measures of attitudes (Howat & Assaker, 2013; 2016) or behavioural intentions (Brady & Robertson, 2001; Caruana, 2002; Cledes, et al., 2011; Zeithaml, et al., 2009). However, loyalty indicators present value only if they are able to successfully predict behaviours (East, et al., 2005) and, to date, very few studies in the fitness setting have extended beyond attitudinal outcomes. This gap presents an opportunity, given that within the wider sport and leisure setting, loyalty indicators are positioned as useful, but also as potentially poor predictors of actual behaviour (Alexandris, et al., 2001; Baker, et al., 2018; Zaharia, et al., 2016). This disconnect is addressed within the current research, examining the role of multi-dimensional loyalty (through attitudinal and behavioural components), satisfaction, and service quality, as well as actual member attendance, in explaining member retention behaviour.

Satisfaction facilitates positive customer relationships and customer loyalty (Wei, et al., 2010). The relationship between satisfaction and loyalty (Cledes, et al., 2011; Cronin, et al., 2000; Dagger, et al., 2007; Parasuraman, et al., 1988), and behavioural intention (Foroughi, et al., 2019; Wang, 2011), has been supported by practitioners and academics.

However, satisfaction has been shown to be a limited predictor of loyalty outcomes, such as retention, in sport contexts (McDonald, 2010; McDonald, et al., 2014; Schneider & Bowen, 1999). Satisfaction is adopted in the current research to further develop understanding of its role in assessing member retention.

Service quality dimensions are proposed as key antecedents to customer satisfaction (Howat & Assaker, 2013; 2016), and underpin retention strategies. This is evident through previous work, where retention strategies are proposed to focus on tangible and intangible service quality and experience dimensions (Yi, et al., 2020). Within a fitness facility context, numerous models have been proposed to measure and conceptualise service quality (e.g., Avourdiadou & Theodorakis, 2014; Chang & Chelladurai, 2003; Chelladurai, et al., 1987; García-Fernández et al., 2018; Howat & Assaker, 2013; 2016; Jasinskis, et al., 2013; Ko & Pastore, 2005; Tsitskari, et al., 2014; Yildiz, 2011). While such models are useful, contention exists in services marketing literature regarding a universally accepted conceptualisation and assessment of service quality. As a result, further work is necessary to understand the relationship between fitness facility service quality and member retention behaviour.

As a bridge, Social Cognitive Theory (SCT) offers a unique understanding of the reciprocal interactions that occur between attitudes and behaviour. SCT proposes adherence behaviour is shaped and controlled by continuous reciprocal interactions between individual (e.g., cognition and self-efficacy), environmental (e.g., situation, roles, and relationships), and behavioural influences (e.g., behavioural pattern and past behaviour) (Bandura, 2001; Crittenden, 2005; Davis & Luthans, 1980; Ginter & White, 1982). These reciprocal relationships allow for a reframing of past work and offer potential to extend conceptualisation to also consider usage behaviours and retention. Application of SCT has been supported to assess retention (Jekauc, et al., 2015) and intervention design in a physical activity context (Hatchett, et al., 2013). Applying an understanding of SCT influences, in

addition to service quality conceptualisation, provides a greater opportunity to evaluate the role of constructs in explaining member retention.

Given SCT has been shown as useful in assessing member retention, the current research integrates an SCT understanding of the role of individual, environmental, and behavioural influences within an existing service quality conceptualisation (Howat & Assaker, 2016). It proposes *individual influences* of SCT as related to the outcome quality dimension of service quality (Howat & Assaker, 2016), resulting from their dual definition as social and functional outcomes of behaviour. Additionally, *environmental influences* are considered as tangible and intangible stimuli that shape learning and behaviour. In a fitness facility context, tangible and intangible service quality stimuli are represented as process quality dimensions (Howat & Assaker, 2016). SCT influences are applied within the current research to enhance evaluation of the role of service quality in explaining member retention behaviour.

Assessment of *individual influences* of SCT necessitates consideration of self-efficacy as a key component in the initiation and maintenance of behaviour (Bandura, 2004). Self-efficacy has been leveraged in a number of studies to investigate sport activity participation (Biddle, et al., 1999; Cetinkalp & Turksoy, 2011; Ryckman & Hamel, 1993), and has been positively associated with persistence, determination, and performance in a variety of domains (Bandura & Locke, 2003; Schmidt, et al., 2010; Stajkovic & Luthans, 1998a). The proposed relationship between self-efficacy and physical activity engagement support the inclusion of self-efficacy within the current research. Self-efficacy is informed through past research (DuCharme & Brawley, 1995; Middelkamp, et al., 2016; Middelkamp, et al., 2017), and proposes valuable insight into behaviour maintenance and facilitation.

Finally, assessment of the role of *behavioural influences* is indispensable from an SCT perspective. While the importance of behaviour patterns and past behaviour is implicit,

in practice, these relationships are underdeveloped in empirical research that seeks to model member retention. Only limited research has investigated behaviour as both a cause and an outcome of fitness facility engagement behaviour (Phipps, et al., 2013). There is thus an important gap in the literature, with literature suggesting that the most obvious way to predict future behaviour is to review past behaviour (Katz et al., 2020; McDonald, 2010; Yi et al. 2020).

To address this gap in the literature, this research evaluates and compares the effectiveness of self-reported and observed attendance behaviour in explaining member retention. In the current context, observed attendance behaviour is expressed through attendance frequency and consistency. Attendance frequency, or the number of times a member attended, has been proposed within research as positively associated to retention (Duncan, et al., 2005; San Emeterio, et al., 2016; Yi, et al., 2020), or as mediating the relationship between satisfaction and behavioural intention (Ferrand, et al., 2010). However, the significance of this relationship has not been unanimous (Gonçalves, et al., 2016). Complementing existing research, the current research seeks to assess the role of attendance frequency – here defined as the percentage of weeks attended throughout the measurement period – in explaining loyalty indicators and retention. To our knowledge, the usefulness of attendance consistency has been neglected within previous analysis. This approach provides greater insight for researchers and practitioners in the field of sport and leisure management.

In sum, while previous studies have determined the importance of loyalty, satisfaction, and service quality for fitness facilities, clarity of their role in explaining member retention has not been sufficiently addressed. Further, research is lacking consideration of the impact of both self-reported and observed attendance behaviours on fitness facility member retention. Therefore, this research extends current conceptualisations and includes additional conditions, such as self-efficacy and behaviour, to identify critical

retention determinants. Such prescription enables the identification of an industry-fit and generic model of member retention, taking into consideration the unique features of fitness facility services.

1.3 Statement of Purpose

Given the importance of the Fitness Industry for a range of stakeholders, including delivery of a service that assists individuals to improve their health and achieve lifestyle goals, it is vital to ensure the financial viability of fitness facilities. The purpose of this research is to examine the utility of attitudinal and behavioural determinants of member retention in a fitness facility context. More specifically, the research attempts to:

- (a) provide an examination of existing models of service quality, value, satisfaction, and loyalty, and their ability to explain member retention in a fitness facility context;
- (b) extend existing models and empirically examine the utility of self-efficacy, self-reported attendance behaviour, and a multi-dimensional conceptualisation of loyalty to explain member retention in a fitness facility context; and
- (c) empirically examine the utility of observed attendance behaviour to explain member retention in a fitness facility context.

Where previous research positions *loyalty* as a final outcome, the current research observes member retention, which is positioned as a *loyalty outcome*. The contribution seeks to build on an emerging focus on behaviours as outcomes in sport and leisure research and provides practical implications for intervention design within the sport, fitness, and leisure industries. Theoretical contributions offer improved understanding of behaviour facilitation and maintenance through an SCT lens. Further, by examining a multi-dimensional conceptualisation of loyalty, the role of loyalty within fitness facility settings is refined.

1.4 Research Questions and Objectives

This research seeks to enhance theoretical and applied tools for understanding member retention and to provide better understanding of the relationship between loyalty indicators, behaviours, and member retention in a fitness facility context. Attitudinal and behavioural data is used to build a model of determinants of member retention and informs intervention design considering the unique characteristics of fitness facility services.

The research is led by the overarching research question: *How do service quality, loyalty, and behaviours, as examined through a Social Cognitive Theory approach, influence member retention in a fitness facility specific context?* The overarching research question can be considered as a function of research sub-questions proposed within three distinct stages of research. A discussion of proposed research stages, and the related research question, is presented next.

Research Stage One (RQ1): How effective are current conceptualisations of service quality and loyalty for explaining member retention in a fitness facility context?

Validation of existing frameworks pose the potential to contextually affirm significant determinants of member retention. To achieve this, Research Stage One investigates member perceptions and attitudes, through a direct replication of Howat and Assaker's (2016) model. The strength of the Howat and Assaker (2016) model lies in the provision of generally significant relationships for the two discrete higher-order service quality dimensions: process quality and outcome quality. Therefore, replication evaluates member service quality perceptions and attitudes through these two discrete service quality dimensions, and culminates in the determination of loyalty, expressed solely through attitudinal indicators. To enhance past work, and inform retention as the primary outcome of this research, Research Stage One empirically extends the Howat and Assaker (2016) model and tests its ability to

explain member retention. Therefore, RQ1 aims to determine the effectiveness of current conceptualisation of constructs – process quality, outcome quality, value, satisfaction, and loyalty – and their utility for explaining member retention in the context of Australian fitness facilities.

Research Stage Two (RQ2): How do self-efficacy, self-reported attendance behaviour, and multi-dimensional loyalty enhance the explanation of member retention in a fitness facility context?

Building on past work, Research Stage Two integrates an SCT view of behaviour facilitation and maintenance and tests the ability of constructs to explain member retention. Specifically, Research Stage Two leverages the extrapolation of SCT to produce a more holistic view of the reciprocal interactions between individual, environmental, and behavioural influences (Crittenden, 2005; Davis & Luthans, 1980; Ginter & White, 1982). This view is achieved through examination of the role of process quality and outcome quality from past work, as well as inclusions of self-efficacy and self-reported attendance behaviour, as determinants of loyalty and member retention.

In addition, Research Stage Two reconceptualises loyalty and includes measures for both attitudinal and behavioural loyalty. This step addresses the view that loyalty, as measured by a single dimension, is inadequate in capturing the loyalty concept and drop-out behaviour (Dick & Basu, 1994; Keller & Lehmann, 2006; Oliver, 1997). A multi-dimensional conceptualisation of loyalty is empirically examined to test the role of loyalty constructs in the development of member retention. This conceptual distinction intends to address the disconnect between member loyalty and actual attendance behaviour suggested within research (DellaVigna & Malmendier, 2006; Garon, et al., 2015). In sum, RQ2 aims to study the determinants of member retention, incorporating the unique additions of self-efficacy, self-reported attendance behaviour, and multi-dimensional loyalty.

Research Stage Three (RQ3): How does observed attendance behaviour enhance the explanation of member retention in a fitness facility context?

Existing research predominantly focuses on the measurement and use of self-reported attitudes, intentions, and behaviours, as opposed to objective, observed behaviour collected in practice (Ostrom, et al., 2015). Disproportional use of observed behaviour has led to an underdeveloped assessment, and understanding, of the role of behaviour patterns and past behaviour in explaining member loyalty, and loyalty outcomes. Research Stage Three provides a view of observed attendance behaviour as both a cause and an outcome of fitness facility engagement behaviour (Phipps, et al., 2013). In particular, attendance frequency and consistency are proposed as core behavioural influences, with RQ3 aiming to evaluate the role of these observed attendance behaviours in explaining member retention in a fitness facility context.

1.5 Justification for the Research

Enhanced understanding of member retention, and its determinants, offers a number of clear contributions to sport and leisure management. Specifically, this contribution sees the evaluation and expansion of an existing model of service quality, value, satisfaction, and loyalty, the integration of an SCT approach to understand behaviour, and the assessment of member retention using both attitudinal and behavioural data. Such contributions seek to satisfy the following research gaps:

- The need to address a lack of consensus regarding key determinants of member retention in a fitness facility context.
- The need to further investigate the disconnect between loyalty indicators and actual attendance behaviour in a fitness facility context.

- The need to address a lack of assessment of behaviour as both a cause and an outcome of behaviour.

Of these, member retention and its determinants in a fitness facility context is the major identified gap. While past research validates the importance of attitudinal constructs of service quality, satisfaction, and loyalty, there is a lack of evidence that these constructs explain member retention. As a result, the current research intends to provide theoretical development by assessing the role of attitudinal *and* behavioural determinants of member retention. The use of attitudinal (e.g. Alexandris, et al., 2004; Cronin & Taylor, 1992; Howat, et al., 1996; Howat & Assaker, 2013; 2016; Kim & Kim, 1995; Ko & Pastore, 2005; McDonald, et al., 1995; Milne & McDonald, 1999; Murray & Howat, 2002; Tsitskari, et al., 2014) and behavioural variables (e.g. Dawes, 2009; East, et al., 2005; George & Wakefield, 2018; Katz, et al., 2020; McDonald, 2010) to assess key member retention determinants complements and enhances previous research in the area of sport and leisure management.

While loyalty indicators are said to present value if they are able to successfully predict behaviour (East, et al., 2005), there is a lack of support for the utility of these indicators (Baker, et al., 2018; Zaharia, et al., 2016). Empirical research evaluating the relationship between loyalty and actual attendance is scarce (Ferrand, et al., 2010), with much research remaining conceptual (Tsitskari & Tsakiraki, 2013). Therefore, further work is necessary to present an applied understanding of this relationship in a fitness facility context. To address this gap, the current research proposes a multi-dimensional conceptualisation of loyalty to explain member retention, defined as an outcome of loyalty (Dawes, 2009; East, et al., 2005). Assessing the role of attitudinal loyalty and behavioural loyalty, respectively, enables a refined understanding of their link to member retention. Such understanding is useful for both academics and practitioners and encourages the development of effective intervention design intended to improve the financial viability of fitness facilities.

Where the majority of similar work has looked at loyalty attitudes or intentions only, an SCT approach encourages deeper consideration of behaviours, as well as individual and environmental factors. Currently, research observes a focus on single aspects of behaviour adoption (Yakut, 2019). This means that, despite recognition of reciprocal determinism, application of SCT determines behavioural influences largely as dependent, and individual and environmental influences as independent. This research gap demonstrates behaviour being evaluated as an outcome or affect, as opposed to a cause (Phipps, et al., 2013). The current research identifies the relevance of behavioural patterns and past behaviour in the development of attitudes and future behaviours. Therefore, consideration and assessment of behaviour as both a cause, and an outcome of behaviour within current research generates valuable insights for both academics and practitioners. Improving understanding of the role of behaviour in explaining member retention, through assessment of observed attendance behaviour, is a key contribution of this research.

The results of this research provide a comprehensive model that specifically assesses member retention within a fitness facility context. The derived value of SCT improves understanding of the interrelationships between concepts, and the role of these in the facilitation and maintenance of retention behaviour. By providing a reliable and valid measurement tool for member retention, fitness facilities are encouraged to design and evaluate their service performance, deriving a competitive advantage for practitioners. Additionally, an examination of causal relationships assists clarification of key concepts and practical implications.

1.6 Thesis Structure

Chapter 1 has presented the research background, context, questions, proposed contribution, and relevance. From here, a literature review is presented in Chapter 2. This chapter

examines the key concepts and themes, discussed in a fitness facility specific context. These central research themes include member retention, exercise behaviour, self-efficacy, customer loyalty, perceived value, satisfaction, service quality, process quality, outcome quality, and SCT. The culmination of literature offers a number of key research gaps to be addressed within the current research.

Chapter 3 presents a detailed conceptual framework for each distinct research stage. Due to multiple stages of research, this chapter identifies the conceptual development, as well as the hypotheses, relevant to each research stage. The employed methodology is then detailed in Chapter 4. Data collection comprises two discrete online questionnaires and behavioural data collected through management software. The systematic development and discussion of item generation and questionnaire measures, as well as a corresponding depiction of data analysis techniques, are defined, corresponding to the relevant stages of research.

Data analysis and discussion is presented throughout Chapter 5, 6, and 7, corresponding to the distinct research stages. Each distinct analysis chapter presents hypothesis tests to evaluate a single proposed research question or stage. Analysis describes data cleaning, representativeness, and descriptive statistics measures. Statistical testing is undertaken inclusive of, but not limited to, Confirmatory Factor Analysis (CFA), and Partial Least Squares Structural Equation Modelling (PLS-SEM). Discussion is included within each analysis for Chapter 5, 6, and 7. Finally, a summary of results is presented as Chapter 8. This discussion includes conclusions, implications, and limitations drawn from this discussion, and identifies both the theoretical and practical contributions to knowledge.

1.7 Delimitations of Research and Scope and Assumptions

Prior to the conception of this research project, Swinburne University was approached to instigate a research partnership with an existing fitness facility management organisation. This relationship intended to evaluate member commitment in a fitness facility context. The partnered organisation operates as a subsidiary company of a larger sporting organisation, and currently manage fitness facilities on behalf of four local governments, or councils, in Victoria, Australia. As a result of this partnership, research focussed on fitness facilities managed by the partner organisation as the unit of analysis. Selection of this organisation reduced the scope of study to a more manageable framework, and, as a result, a number of delimitations were identified and addressed.

The current research investigated a single fitness facility managed by the partner organisation, in a north-eastern suburb of Melbourne, Victoria. The decision to focus all research at this facility was appropriate, given the need for a combination of multiple data sources throughout data collection and analysis (e.g., attitudinal data collections and behavioural data) and multiple data collections. The management of this facility by the partner organisation allowed for convenience of data collection and limited contextual and environmental variables, compared to the use of facilities that may operate across differing categories (e.g., budget, CrossFit, 24/7, boutique, luxury, or yoga), cultures, or nations. In addition, the chosen facility presented the largest membership base of those operated by the partner. The larger membership base provided scope for a larger research sample, and maximised potential to analyse cross-group differences, as well as maximised representativeness to the broader population.

Despite efforts to eliminate them, potential limitations exist that impact both theoretical and managerial implications of the current research. Utilising exclusively a single fitness facility managed by the partner organisation in Victoria, Australia, denotes a small

segment of the larger Fitness Industry. Further, while the questionnaire instrument was disseminated to all members operating under a ‘continuous’ service or ‘membership’ relationship at a single fitness facility, the convenience sampling method did not account for members within alternate fitness service contexts. Resultantly, this research is limited by an inability to assuredly generalise results to other similar types of organisations and different industry segments of the Fitness Industry.

Additionally, the use of an online questionnaire for data collection generates attributed limitations. Limitations of questionnaire research include ensuring research questions are clear and not misleading. This is a limitation where the self-administered nature of questionnaires poses an inability to clarify or explain questionnaire items. Furthermore, controlling for boredom and fatigue (Bryman, 2008) is sought in an attempt to ensure thoughtful and honest responses (Fraenkel & Wallen, 1996). A final limitation of an online questionnaire data collection is concern for bias resulting from high levels of non-response. Despite efforts to provide all current members with the opportunity to participate, voluntary effort is likely to be engaged by members who were emotionally and cognitively involved with the fitness facility.

Overall, the characteristics of the fitness facility investigated need to be taken into consideration when applying these methods and findings to other fitness facility contexts and leisure-related industries, as results may differ due to contextual factors.

1.8 Summary of Findings

Findings of this research contribute toward a developed understanding of member retention and its determinants in a fitness facility context. Due to the structure of the current research, results are presented in aggregate, as per their positioning within respective research stages. An overview is provided below for each stage.

Research Stage One largely replicated findings of Howat and Assaker (2016), defining a number of perceptions and attitudes related to member engagement. Results validated four lower-order process quality and four lower-order outcome quality dimensions specific to the Fitness Industry, and proposed process quality as an antecedent of loyalty mediated by overall satisfaction. Most noteworthy within Research Stage One was the failure to support a direct, significant relationship between loyalty and retention. Implications provided impetus to improve conceptualisation within subsequent research stages, in particular through the integration of SCT influences, and measurement of a multi-dimensional conceptualisation of loyalty.

Research Stage Two found empirical support for self-reported attendance behaviour and behavioural loyalty as direct, significant determinants of member retention. An SCT perspective provided meaningful integration of self-efficacy and self-reported attendance behaviour. Further, the proposal of a multi-dimensional conceptualisation of loyalty was validated. Results demonstrated a significant relationship between behavioural loyalty and member retention but failed to demonstrate a significant relationship between attitudinal loyalty and member retention. The findings validate the need to examine loyalty as multi-dimensional, and contend previous research suggesting loyalty is a poor predictor of actual behaviour (Alexandris, et al., 2001; Baker, et al., 2018; Zaharia, et al., 2016). These results assert that the role of specific loyalty indicators should be considered and assessed to adequately delineate the effect on member retention in a fitness facility context. Constructs proposed and measured in Research Stage Two explained 11.5% of the variance in member retention. In sum, Research Stage Two contributed to an enhanced understanding of member retention determinants, supporting the utility of self-efficacy, self-reported attendance behaviour, and a multi-dimensional conceptualisation of loyalty.

Research Stage Three validated the applicability and significance of observed attendance behaviour to explain member retention in a fitness facility context. All measured constructs, with the exception of attitudinal loyalty, were viewed as important in the development of member retention, either directly or indirectly. Further, the use of observed attendance behaviour demonstrated an enhanced ability to explain member retention, in comparison to self-reported attendance behaviour presented within Research Stage Two. The culmination of attitudinal and behavioural constructs explained 18.7% of the variance in member retention. While supporting the merit and use of attitudinal constructs, Research Stage Three findings emphasise the need to prioritise behavioural data to effectively assess member retention. In sum, assessment of SCT influences, a multi-dimensional conceptualisation of loyalty, and observed attendance behaviour, enhances explanation of member retention in a fitness facility context.

1.9 Chapter Summary

The current research proposes a number of advances that contribute to the field of sport and leisure management. The Fitness Industry is highlighted as the research context, with research questions and objectives defined within three distinct stages of research. These research stages evaluate and extend an existing model of service quality, value, satisfaction, and loyalty. Meaningful extensions are demonstrated through the assessment of member retention, as a loyalty outcome, through the lens of both attitudinal and behavioural data. Delimitations are proposed, inclusive of the study scope, and the contextual and cultural limitations, as well as restrictions imposed by data collection methods. The following chapter will explore the research background of central research themes, which support the formation of the conceptual framework and the development of research questions.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter synthesises and examines literature pertaining to attitudes, engagement, and behaviour in a fitness facility context. As the key variable, focus is given to member retention and the theoretical and applied tools for understanding its development. Therefore, this review considers both a range of areas, or determinants, of member retention prominently conceptualised in past work, as well as the role of behaviour within sport and leisure management. Specifically, reviewed areas include exercise behaviour (Section 2.3), self-efficacy (Section 2.4), customer loyalty (Section 2.5), perceived value (Section 2.6), satisfaction (Section 2.7), service quality (Section 2.8), and Social Cognitive Theory (SCT) (Section 2.9). Delineation of these constructs inform the theoretical foundation of the current research and pose a number of significant research contributions and gaps. At large, the literature review will introduce and contextualise key academic concepts related to member retention, with subsequent relationships defined within the conceptual framework presented in later chapters.

2.2 Member Retention

Retention is broadly referred to as continuing customer relationships maintained by a business (Burton, 2011; Hallowell, 1996; Tahtinen & Halinen, 2002). In this way, retention is often measured as a dependent variable that can take on one of two values. For example, a customer may choose to either continue or cancel their service or membership (Bolton, et al., 2000). Ongoing customer relationships are important across numerous service industries, with retention viewed as a contributor to net growth (Burton, 2011). While the utility of retention is well established, the dominant collection of attitudinal measures within research has resulted in the use of intention to re-buy as a proxy for retention. Such use of self-

reported measures confounds understanding of ‘retention’ and ‘loyalty’. However, these concepts are not interchangeable and must be conceptually distinguished. Distinction is apparent, where retention is shown as a manifestation of loyalty, but not as equivalent (Iwasaki & Havitz, 2004; Oliver 1999). Further, over a shortened time-horizon, loyalty is not necessarily correlated with customer retention (Blattberg, et al., 2001; Watts, 2012), and in some instances has been shown as having poor predictive power for actual behaviour (Baker, et al., 2018; Katz, et al., 2020; Zaharia, et al., 2016). Consequently, retention is delineated as an outcome of loyalty (Dawes, 2009; East, et al., 2005).

The critical role of customers is recognised within the Fitness Industry, where revenue is largely provided by membership fees (Lam, et al., 2005; Reichheld & Sasser, 1990; Sawyer & Smith, 1999; Tsitskari & Tsakiraki, 2013). Strategies to acquire and retain members are imperative for financial viability. In a fitness facility context, retention is defined as the continuance of repeated purchases (Bodet, 2012; San Emeterio, et al., 2016; Watts, 2012) and is viewed as “the Achilles heel of this [Fitness] industry” (International Health, Racquet and Sportsclub Association, 2006, p. 34). Specifically, while customer acquisition is necessary for membership services, retention is a less costly strategy (Rosenberg & Czepiel, 1984), which impacts management practice (Yi, et al., 2019) and organisation financial performance (Fornell, 2007). As a result, retention strategies are sought by practitioners and represent an increasing interest area for empirical research (Yi, et al., 2020).

Retention strategies have been associated with a range of factors – both tangible (e.g., facility attributes) and intangible (e.g., service value). Therefore, to adequately define retention intervention strategies, a focus on experience is necessary (Yi, et al., 2020). However, while practitioners are informed of the importance of retention, robust definition and measurement of retention in practice are limited (Aspinall, et al., 2001). Previous research effort in the Fitness Industry has demonstrated that as many as 50% of individuals

cease exercise at a given fitness facility within the first six months (Berger, et al., 2002). Further, the Fitness Industry Association suggested that 40% of fitness facility members are lost, or churn, annually (FIA, 2002). Notwithstanding poor performance, limited consensus of critical retention determinants is evident in a fitness facility context (Yi, et al., 2020). Of particular relevance to a fitness facility context are unique factors that challenge retention, such as continuous psychological commitment and physical adherence (Dishman, 2001).

In an effort to evaluate member retention determinants, a number of studies have explored service quality, satisfaction, and loyalty (Garcia-Fernandez, et al., 2014). In addition to customer driven factors, frequent exercise behaviour has been proposed as positively associated with retention (Duncan, et al., 2005; San Emeterio, et al., 2016; Yi, et al., 2020). While these constructs have been supported as necessary, the utility of models using these constructs to predict retention is empirically under-investigated. While various construct relationships have been proposed the limited consensus of member retention determinants indicates further investigation is required to provide comprehensive assessment in a fitness facility context. Having outlined member retention as the outcome variable of focus, this review will now consider the range of areas, or determinants, that build an understanding of the theoretical and applied tools that contribute to member retention.

2.3 Exercise Behaviour

Use of behaviour to effectively explore member retention is growing within sport and leisure management (George & Wakefield, 2018; Katz, et al., 2020; McDonald, 2010; Yi, et al., 2020). While this is promising, further work is necessary. Specifically, the challenge lies in the measurement and availability of behavioural data. This is despite the ability to obtain behavioural data ongoing without disturbing members (San Emeterio, et al., 2016). Successful collection of behaviour within wider sport research has demonstrated games

attended in the year prior as significantly related to repurchase decisions (McDonald, 2010; McDonald et al., 2014) and to upgraded ticket packages (George & Wakefield, 2018). Within fitness facility research, attendance frequency has been positively associated with retention (Duncan, et al., 2005; San Emeterio, et al., 2016; Yi, et al., 2020), and as mediating the relationship between satisfaction and behavioural intention (Ferrand, et al., 2010) with few exceptions (Gonçalves, et al., 2016). Such studies are relevant in the current context and support the use of exercise behaviour to explain retention.

In a Fitness Industry context, sustained participation behaviour is necessary to maintain myriad physical health benefits associated with exercise (Hunter, et al., 2018) and is identified as an important field of research (Thøgersen-Ntoumani & Ntoumanis, 2006). While the role of past exercise behaviour is broadly supported as significant, member behaviour is characterised by inconsistent and poor attendance (DellaVigna & Malmendier, 2006; Garon, et al., 2015). Specifically, research has drawn attention to the disparity between self-reported measures of behaviour and observed behaviour. DellaVigna and Malmendier (2006) found that, despite average attendance declining from 5.46 to 4.32 per month in the first six months of membership, members reported 9.50 visits per month on average (DellaVigna & Malmendier, 2006). Similarly, Garon, et al. (2015) found members' predicted monthly attendance to be 3.04, when the actual average was measured at 1.39 visits. In short, participants significantly overestimate attendance. In these cases, the disparity between self-reported and observed exercise behaviour epitomises an optimistic view of exercise adherence held by members. This disparity highlights the need to further investigate the role of behaviour, and intention, as predictors of future behaviour. As a bridge, SCT offers a unique understanding of the reciprocal interactions that influence behaviour and encourages a deeper consideration of behavioural factors, as well as individual and environmental factors.

The premise of SCT is that human behaviour is shaped and controlled by continuous reciprocal interactions between individual, environmental, and behavioural influences (Crittenden, 2005; Davis & Luthans, 1980; Ginter & White, 1982). This reciprocity, or reciprocal determinism (Bandura, 1986), reflects the view that individuals – through cognition, and environmental inducements and constraints – continuously choose the activation and direction of behaviour (Bandura, 1979). One influence may demonstrate dominance over others (Yakut, 2019), or alternatively, a variation in one influence may cause changes in others and in the overall behaviour (Ozmete & Hira, 2011). Reciprocal determinism asserts that individual, environmental, and behavioural influences cannot be evaluated separately (Phipps, et al., 2013), and posits that behaviour does not result from any one influence in isolation (Crittenden, 2005). Despite relevance, much research observes a focus on single aspects of behaviour adoption (Yakut, 2019). This means that despite recognition of reciprocal determinism, application of SCT considers behavioural influences largely as dependent, and individual and environmental influences as independent. Phipps et al. (2013) suggest that further work is needed to evaluate behaviour as both an outcome or affect, as well as a cause, of behaviour. The dynamic interplay of SCT influences positions this theoretical framework as promising in the pursuit of exploration and application of behaviour within a fitness facility context, and is discussed further in Section 2.9.

In sum, while further advancements are necessary (Yi, et al., 2020), assessment of behaviour within sport and leisure management is increasing. This increase considers the critical role of past exercise behaviour as a predictor of retention (Duncan, et al., 2005; San Emeterio, et al., 2016, Yi, et al., 2020), as well of the disparity between self-reported and observed behaviour (DellaVigna & Malmendier, 2006; Garon, et al., 2015). Despite increasing focus, efforts to distill past exercise behaviour into valuable insights regarding member retention is underdeveloped. SCT allows for the inclusion of behavioural data in the

assessment of overall member retention and offers the potential to improve understanding of behaviour initiation and maintenance.

2.4 Self-Efficacy

An understanding of behaviour, as derived through SCT, emphasises the importance of self-efficacy. As a construct of human motivation (Schmidt & Deshon, 2009), self-efficacy refers to the belief an individual has regarding their capabilities to execute a behaviour, and to overcome barriers or obstacles (Bandura, 1997). Conceptualisation through SCT has demonstrated self-efficacy as positively associated with persistence, determination, and performance in a variety of domains (Bandura & Locke, 2003; Schmidt, et al., 2010; Stajkovic & Luthans, 1998b). Furthermore, self-efficacy has shown merit within psychological studies, demonstrating a positive relationship with improved health, higher achievement, and social integration (Bandura, 1997; Scholz, et al., 2002; Schwarzer, 1992).

Through resilience promotion (Schmidt & Deshon, 2009), self-efficacy influences how people feel, think, and act (Bandura, 1997). Therefore, individuals who perceive a high self-efficacy are more likely to increase performance levels, try new behaviours, expend more effort, and persevere with behaviours through setbacks (Bandura, 1997; Gao, et al., 2008; Gao, et al., 2013). Additionally, when setbacks occur, individuals who perceive a higher self-efficacy recover quickly and are able to maintain commitment to their goals. Dissimilarly, individuals perceiving low self-efficacy have been associated with depression, low self-esteem, and pessimistic thoughts in relation to their accomplishments and personal development (Bandura, 1997; Scholz, et al., 2002). This is relevant in an exercise adherence context, as it would be expected that those members who demonstrate high perceived self-efficacy would attendance favourably. To recapitulate the effects of self-efficacy broadly, positive self-efficacy outcomes realise a ‘can-do’ cognition (Scholz, et al., 2002), promoting

an ability to exert control over potentially challenging environments and implement adaptive action, and a capacity to confidently deal with life stressors. Alternatively, low self-efficacy outcomes realise difficult endeavours as insurmountable challenges and see investment in these actions as futile (Schmidt, et al., 2010).

Self-efficacy has been leveraged in a number of studies to investigate sport activity participation (Biddle, et al., 1999; Cetinkalp & Turksoy, 2011; Ryckman & Hamel, 1993). Within an exercise context, self-efficacy has been supported as predicting the physical activity behaviour of healthy adults (Kaewthummanukul & Brown, 2006; Rovniak, et al., 2002; Sharma & Sargent, 2005), long-term maintenance of physical activity at home (Mcauley, et al., 2007; Oman & King, 1998), and the maintenance of physical activity (Hankonen, et al., 2010; Sallis, et al., 1992; Strachan, et al., 2005; White, et al., 2012). The influence of self-efficacy varies between individuals (Feltz, et al., 2008), emphasising its importance as a consideration when reviewing exercise behaviour and outcomes of service in a fitness facility context.

Bandura's (1997) self-efficacy is comprised using four information sources: enactive mastery experience, vicarious experience, verbal persuasion, and emotional arousal. To better encapsulate the concept of self-efficacy, an understanding of these information sources must be derived. *Firstly*, enactive mastery experience is defined through successful behaviour, where success enhances, and failure undermines, efficacy perception (Ashford, et al., 2010). *Secondly*, vicarious experience represents individual appraisal of their own performance against a comparable or 'model' individual who has successfully performed a behaviour (Scholz, et al., 2002). Within vicarious experience, social comparison can improve self-efficacy beliefs (Ashford, et al., 2010). *Thirdly*, verbal persuasion is evident where a third-party individual expresses faith in, or encourages, one's capability to execute behaviour. Bandura (1977) emphasised the potential effects of verbal persuasion to be long lasting.

Finally, emotional arousal describes the experience of anxiety or threat by an individual, resulting in the perceived inability to master the situation (Ashford, et al., 2010).

As a core determinant underlying SCT, self-efficacy is proposed as providing an important basis for the prediction of subsequent behavioural action, but also as influenced by behavioural successes and failures (Mcauley, et al., 2011). Research application of self-efficacy demonstrates its value for investigating coping behaviour, effort and performance, and perseverance amidst barriers and aversive experiences (Scholz, et al., 2002). Within the current research context, self-efficacy is worthwhile as a determinant of exercise behaviour and member retention.

2.5 Customer Loyalty

Customer loyalty is widely accepted as generating competitive advantage (Bharadwaj, et al., 1993), and as key to organisational survival and growth (Reichheld, 1996). Despite its importance, consensus is lacking as to how the loyalty construct is both measured and defined. A commonly accepted definition is:

A deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour. (Oliver, 1999, p.34).

From a Fitness Industry perspective, customer loyalty has been defined as a favourable attitude held by consumers towards a fitness facility, measured through recommendation and positive repurchase behaviours (Dimitriadis, 2006; Yoshida & James, 2010). However, it has been contended that this view, and corresponding one-dimensional conceptualisation, inadequately captures the concept of loyalty (Dick & Basu, 1994; Doyle, et al., 2013; Keller & Lehmann, 2006; Li & Petrick, 2010; Oliver, 1997). To address this inadequacy, customer

loyalty has instead been proposed as having distinct attitudinal and behavioural components (Dick & Basu, 1994; Jones & Taylor, 2007).

Attitudinal loyalty describes the positive thoughts and favourable feelings that consumers express towards providers of goods and services. Such indicators of loyalty are frequently epitomised through intention to recommend. Word of mouth recommendations are a dominant force (Mangold, et al., 1999), which test customer relationships (Bendapudi & Berry, 1997). While intention to recommend has been proposed as a predictor of firm performance (Keiningham, et al., 2007; Reichheld, 2003), a determinant of future behavioural intention (Finn, et al., 2009), and is highly correlated with repeat purchases and recommendation (Reichheld, 2003), this is not unanimous. In particular, Bodet (2008) found that attitudinal loyalty did not predict customer repurchase behaviour. Further work is needed to assert the role of attitudinal loyalty as a predictive management tool to measure future financial performance and impact. Conversely, behavioural intention refers to the degree to which a consumer intends to perform or not to perform a specified future behaviour (Ajzen & Fishbein, 1980). This has also been proposed as an affirmed likelihood (Oliver, 1997) or subjective probability (Yi, et al., 2006) to engage in, or perform, behaviour. Resulting from conceptualisation, behavioural intention is considered a useful indicator of future sales (Biscaia, et al., 2013).

While its definition is clear, contention exists for the role of behavioural intention in explaining actual behaviour. This is evident where research has asserted behavioural intention as a relatively accurate predictor (Brady & Robertson, 2001; Caruana, 2002; Clemes, et al., 2011; Mansour & Ariffin, 2017; Zeithaml, et al., 2009), exhibiting limited correspondence (Alexandris, et al., 2001; Bodet, 2012), and as having poor predictive power for actual behaviour (Baker, et al., 2018; Katz, et al., 2020; Zaharia, et al., 2016). Inconsistent relationships suggest that loyalty intention indicators may not enable identification of

retention (Watts, 2012). In this way, retention is unable to differentiate between consumers who repurchase as a result of positive loyalty, and those who repurchase as a result of inertia, market structure, or situational factors (San Emeterio, et al., 2016). The disconnect between behavioural intention and behaviour is worthy of further investigation, especially in a fitness facility context where retention is suggested as vital to financial viability (Lam, et al., 2005; Reichheld & Sasser, 1990; Sawyer & Smith, 1999; Tsitskari & Tsakiraki, 2013).

Within the current service landscape, factors that attribute to customer loyalty have become crucial to sport and leisure service providers (Li & Petrick, 2010). In an effort to evaluate and improve customer loyalty measurement, numerous studies have sought to delineate the direct and indirect relationships with concepts such as perceived value, satisfaction, and service quality (Agustin & Singh, 2005; Alexandris, et al., 2004; Backman & Crompton, 1991; Bodet, 2012; Ferrand, et al., 2010; Ganesh, et al., 2000; Howat & Assaker, 2013; 2016; Iwasaki & Havitz, 2004; Javadein, et al., 2008; Srinivasan, et al., 2002; Li & Petrick, 2010; Tsitskari, et al., 2014; Valle, et al., 2006). Conflicting findings depict antecedents of loyalty as an indirect mediator, moderator, or even as a consequence of loyalty. As a result, indecision remains regarding the critical drivers of loyalty (Agustin & Singh, 2005) and how these variables are interrelated (Li & Petrick, 2010). In addition, understanding of the antecedents and consequences of loyalty, separately, is largely absent from a fitness facility perspective.

From the above discussion, and as noted by Jones and Taylor (2007), there is currently no agreed definition of loyalty. Proposed distinction of the loyalty construct allows recognition of both attitudes and behaviour as important (Dick & Basu, 1994). While this distinction is supported, concurrent assessment is largely absent in a fitness facility context. Measurement of both attitudinal and behavioural elements of loyalty pose the potential to

understand the nature and dimensionality of the loyalty construct, as well as providing a more comprehensive assessment and evaluation of critical loyalty drivers.

2.6 Perceived Value

Defining and measuring perceived value has proven to be a challenge for researchers (Holbrook, 1994; Woodruff, 1997; Zeithaml, 1988), with many proposing differing conceptualisations (Dodds, et al., 1991; Gale, 1994; Holbrook, 1994; Holbrook & Corfman, 1985; Monroe, 2003; Oliver, 1997; Snoj, et al., 2004; Woodruff, 1997; Zeithaml, 1988). Zeithaml (1988, p.14) defined perceived value as “the global evaluation of the consumer regarding the utility of the product based on the perception of what is received in exchange for what is given”. This proposal has been cited frequently within literature and has become one of the more widely accepted and straightforward ways of defining customer value. This definition is operationalised by Bolton and Drew (1991) who assert that customer value is a trade-off between quality and cost. Problematic for researchers is the nature of value as an abstract concept, given the highly personal and idiosyncratic variability of perception (Holbrook, 1994; Zeithaml, 1988). Despite this, value remains a significant consideration within marketing, and is considered as directly linked to the attainment of a differential advantage (Arvidsson, 2006; Gallarza, et al., 2011; Gale, 1994; Woodruff, 1997; Woodruff & Gardial, 1996).

Derivation of perceived value from a utilitarian perspective is commonly noted throughout both marketing and sport and leisure literature (Howat & Assaker, 2013). This view delineates monetary and non-monetary costs (Li & Petrick, 2010; Petrick, 2002; Zeithaml, 1988). Perceived value is thus described as the perception of what the customer receives, through benefits such as quality, in exchange for what the customer gives, such as sacrifices of a monetary and non-monetary nature (Oliver, 1999). While monetary sacrifices,

such as the price paid for memberships, may be easy to measure, non-monetary variables, such as the effort to consume the service, inconveniences, and location or time, require more strategic effort to evaluate.

The role of customer value has been evaluated to explain determinants of future intentions (Bolton & Drew, 1991) and satisfaction (Zeithaml, 1988), as well as to depict consequences of quality (Byon, et al., 2013; Calabuig, et al., 2015; García-Fernández et al., 2018; Nuviala, et al., 2012; Theodorakis et al., 2014). Generally, satisfaction is more common among customers who have received value for money than those who have not. Research has supported perceived value as positively and directly impacting customer satisfaction (Cronin, et al., 2000), despite it being possible for satisfaction to be an antecedent as well as a consequence of perceived value (García-Fernández, et al., 2018). Furthermore, a positive relationship between quality and value is established throughout much sport marketing and management literature. In a study of sporting event spectators, Calabuig et al. (2015) found a direct and positive relationship between quality and value. Similarly, this relationship has been supported by García-Fernández et al. (2018) in low-cost fitness centres, Theodorakis et al. (2014) in Greek health clubs, Howat and Assaker (2013) in Australian aquatic centres, Byon, et al. (2013) with professional sporting teams, and by Nuviala et al. (2012), who observed this relationship in sporting organisations in general. From a fitness facility perspective, the vast support of the role of value in determining quality, satisfaction, and loyalty validates the merit of this concept in facilitating engagement.

2.7 Satisfaction

Customer satisfaction is a core business challenge that seeks to identify and analyse customer expectations, needs, and desires (Dutka, 1995). Oliver (1997, p.8) provides a comprehensive definition of customer satisfaction:

Satisfaction is the consumer's fulfillment response. It is a judgment that a product or service feature, or the product or service itself, provided (or is providing) a pleasurable level of consumption-related fulfillment, including levels of under- or over-fulfillment.

Satisfaction facilitates positive customer relationships and loyalty (Wei, et al., 2010).

Assessment of satisfaction evaluates customers' post-service feelings toward a product or service (Choi & Chu, 2001), based on cumulative experiences with that service (Gustafsson & Johnson, 2005; Homburg, et al., 2005; Howat & Assaker, 2016; Seiders, et al., 2005; Skogland & Siguaw, 2004). This concept differs from customer satisfaction arising from a single transaction (Oliver, 1997). The measurement of customer satisfaction requires applied efforts to collect, measure, analyse, and explain the concept (Grigoroudis & Siskos, 2010). To achieve this, a number of measurement scales, comprising both single and multi-item scales, have been applied in a sport context (Alexandris, et al., 2004; Bodet, 2008; Ferrand et al., 2010; Murray & Howat, 2002).

As an antecedent of consumer loyalty, customer satisfaction stimulates organisational profitability (Wei, et al., 2010). The literature examining fitness facility contexts has supported satisfaction as a significant driver of retention (Gonçalves & Diniz, 2015; Gonçalves, et al., 2016), willingness to recommend (Funk, et al., 2016; Howat, et al., 1999), behavioural intentions, and loyalty (Funk, et al., 2016; Pedragosa & Correia, 2009; Yu, et al., 2014). Similar relationships have been demonstrated in broader sport literature, affirming satisfaction as mediating the relationship between quality of service and behavioural intention (Murray & Howat, 2002) and perceived quality and loyalty (Alexandris, et al., 2004). Dissatisfied customers are less likely to intend to repeat behaviours, while satisfied customers, in comparison, are highly committed (Cronin, et al., 2000; Lee, et al., 2011; Tian-Cole, et al., 2002).

Despite practitioner and academic proposal of an inextricable link between satisfaction and loyalty (Clemes, et al., 2011; Cronin, et al., 2000; Dagger, et al., 2007; Parasuraman, et al., 1988), support is not unanimous. Such opposition is evidenced through the work of East, et al. (2006). This research found a weak relationship between satisfaction and retention and proposed previous conceptualisation as overstating relationship significance. Therefore, continued investigation of satisfaction is worthwhile in a fitness facility context where behavioural intention and customer loyalty are evaluated.

As a final point, while satisfied customers are a necessity, in isolation, ensuring satisfaction does not provide a complete depiction of company success. Satisfaction is considered the minimum requirement to exhibit behavioural intention (Foroughi, et al., 2019; Wang, 2011). In this way, satisfaction is insufficient in determining customers who discontinue a service engagement as a result of lacking commitment or interest (Schneider & Bowen, 1999). As a result, customer satisfaction is recognised as a necessary field of study (Van Leeuwen, et al., 2002), but as insufficient to explain the totality of retention behaviour.

2.8 Service Quality

The growth of the Fitness Industry in both size and influence (Weed, 2016) has facilitated a competitive environment, where managers must seek to continuously create differential value in order to attract and retain members (Foroughi, et al., 2019). As a solution, service quality has been proposed (García-Fernández, et al., 2018; Theodorakis, et al., 2014; Tsitskari, et al., 2017).

The conceptualisation and measurement of service quality is important to define. Initially evaluated from a disconfirmation viewpoint, service quality was expressed as the difference between the customer's expectations of the service, and their perception of what they received (Boulding, et al., 1993; Grönroos, 1984). This view of service quality is defined

by Parasuraman et al. (1988, p.16) as “a global judgment or attitude relating to the superiority of a service”. Evolution of the concept has seen service quality indicated through customer impression and attitude (Berry, 1980) and long-term evaluation (Cronin & Taylor, 1994). Optimal service quality is therefore attained when customer expectations are exceeded (Grundey, 2009; Jasinskis, et al., 2013; Włodarczyk-Spiwak, 2011), and is considered a method of differentiation within service-oriented businesses (Parasuraman, et al., 1988). This definition holds true for sport consumers, where behaviour centres on experience fulfillment (Funk, 2008).

Academia has attempted to understand service quality through the lens of several different sport contexts. These include recreation and leisure (Crompton, et al., 1991; Howat, et al., 1996; MacKay & Crompton, 1988), fitness (Kim & Kim, 1995), and professional sport (McDonald, et al., 1995; Milne & McDonald, 1999). Such scholarly attempts to defining and meeting the needs of customers are beneficial for review. Despite existing research, the conceptualisation and assessment of service quality perceptions have been described as both elusive (Brady & Cronin, 2001; Parasuraman, et al., 1985; Smith, 1999) and unresolved (Caruana, et al., 2000). These perceptions arise due to lack of a single unifying theory describing the service quality construct, both in terms of its complexity and hierarchical nature (Brady & Cronin, 2001). Therefore, further work is needed to consider and evaluate the unique service dimensions of sport services (Murray & Howat, 2002; Yildiz, 2011).

In fitness facility specific contexts, numerous models have conceptualised service quality (Avourdiadou & Theodorakis, 2014; Chang & Chelladurai, 2003; Chelladurai, et al., 1987; García-Fernández, et al., 2018; Jasinskis, et al., 2013; Ko & Pastore, 2005; Theodorakis, et al., 2014; Tsitskari, et al., 2014; Tsitskari, et al., 2017; Yildiz, 2011). Some conceptualisations, such as that by Theodorakis et al. (2014), have explored service quality as unidirectional, and demonstrated that customers who perceived higher value and satisfaction

also perceived higher service quality. While others have evolved the research agenda to focus on the dynamic and asynchronous relationships, such as that by Avourdiadou and Theodorakis (2014), who propose service quality as a major driver of loyalty for novice customers, comparatively to experienced customers. While these conceptualisations are useful, a view of service quality as a higher-order reflective construct is dominant (Avourdiadou & Theodorakis, 2014; Clemes, et al., 2011; García-Fernández, et al., 2018; Polyakova, 2016; Theodorakis, et al., 2014; Yu, et al., 2014). As a result, limited assessment of the influence of distinct dimensions of service quality on overall satisfaction, as separate second-order variables, is evident (Theodorakis, et al., 2013).

Distinction of service quality, and corresponding relationships, is important to define where service quality and satisfaction are positioned as key drivers toward ongoing customer commitment and loyalty (Murray & Howat, 2002; Tsitskari, et al., 2014), positive word of mouth, and increased organisational performance (Howat, et al., 1996). To address this inadequacy, a formative model proposed by Howat and Assaker (2016) is examined to delineate *process* quality and *outcome* quality as distinct constructs of service quality. These distinct service quality constructs, as well as the Howat and Assaker (2016) framework, are explained in the following sections.

2.8.1 Process Quality

Process quality has been proposed as pertaining to peripheral service quality attributes (Grönroos, 1984). Specifically, conceptualisation within the SERVQUAL model (Parasuraman et al., 1988) describes process quality as comprising the tangible elements of a service, such as facilities, equipment, assurance, empathy, and responsiveness (Zeithaml, et al., 2009). Similarly, Grönroos' (1984) distinction of process quality considers functional quality dimensions. These studies provide a foundation of process quality understanding, and

have been leveraged in differing contexts (Lee, 2017; Yoon & Lee, 2017; Yusof, et al., 2014; Zeithaml, et al., 2009). To better evaluate the evolution of process quality conceptualisation, a brief review of the work of Brady and Cronin (2001) and Howat and Assaker (2016) is undertaken.

Brady and Cronin (2001) developed a hierarchical model using a second-order construct with three dimensions. This view sought the aggregation of customer evaluations of subdimensions, ultimately combining these evaluations to form their overall service quality perception (Brady & Cronin, 2001). Specifically, process quality is defined through two elements: the quality of interaction and the physical environment.

First, interaction quality epitomises the relationships between customers and staff, having a pivotal effect on customer perceptions of service quality (Bitner, et al., 1994). In a fitness facility context, customers interact with both fitness professionals and administrative staff. The customer's service quality perceptions are closely linked to the attitude, behaviour, and competence of employees (Yoshida & James, 2010). This relationship has been affirmed in sport-specific contexts (Alexandris, et al., 2001; Howat, et al., 1999; Papadimitriou & Karteliotis, 2000). *Second*, physical environment quality refers to tangible elements that the customer experiences. In a fitness facility context, these elements include the physical equipment and the general atmosphere of the centre (Alexandris, et al., 2004). The process quality conceptualisation by Brady and Cronin (2001) demonstrate its distinction and relevance in a fitness facility context.

Leveraging previous conceptualisation, Howat and Assaker (2016) developed a higher-order, formative process quality construct. This construct considered fitness facility specific elements of the service encounter, inclusive of service environment and service delivery factors. The final conceptualisation consisted of four lower-order dimensions: facility presentation, core services, secondary services, and staff. The work by Howat and

Assaker (2016) is reviewed in the current research as an evolved conceptualisation of service quality within a fitness facility context.

2.8.2 Outcome Quality

Outcomes are defined by Alexandris, et al. (2012, p.62) as representing “perceived physical, psychological and sociological benefits” relative to the consumer’s expectations. These physical, psychological, and sociological outcomes are pivotal considerations when mapping customer satisfaction and service quality in a fitness facility context and seeking to optimise member health and wellbeing. Despite their distinct and specific utility, outcome quality dimensions have been largely excluded from scales, and limited in terms of empirical research (Jain & Jain, 2015). This discrepancy in research can be attributed to the tendency for service products to lack preproduced products to evaluate (Grönroos, 1982), and supports the necessity for further review of the outcome quality construct.

Attempts to address the inadequate review of outcome quality are evidenced within sport literature. Specifically, Brady and Cronin (2001) proposed outcome quality as a distinct sub-dimension of service quality, alongside process quality sub dimensions. Active integration of outcome quality was again adopted by Alexandris et al. (2004), using a five-item single outcome quality dimension to assess positive health-related consequences of fitness and exercise in service quality models for fitness facilities. These findings supported outcome quality as significant in the procurement of satisfaction (Alexandris, et al., 2004). Furthermore, a multi-dimensional, hierarchical outcome quality construct was proposed by Ko and Pastore (2005) for university recreational sport participants. Leveraging this study, Alexandris, et al. (2012) devised a single outcome quality dimension for recreational dancers and included eight subdimensions: improved energy, health, mood, psychological wellbeing, fitness, socialisation, appearance, and skills. The results of this study determined outcomes as

a service quality dimension with merit for predicting levels of leisure involvement (Alexandris, et al., 2012). While the above studies demonstrate the significance of a distinct conceptualisation of outcome quality, a lack of consistency is evident (Howat & Assaker, 2013).

To address the lacking consistency of outcome quality conceptualisation in a fitness facility context, we examine the work of Howat and Assaker (2016). The work of Howat and Assaker (2016) corresponds with the above definitions, conceptualising outcome quality as a distinct construct of service quality. Specifically, a higher-order, formative construct was supported, considering the importance of sought benefits, and the extent to which achievement occurred as a result of fitness facility engagement. The final conceptualisation consisted of four, lower-order dimensions: competition success, social connection, health and fitness, and relaxation and stress release. The results of this research produced a set of practical, and comprehensive outcome quality subdimensions, specific to public aquatic centres in Australia.

Outcome quality has been conceptualised as what the customer received through experiences gained from the services, inclusive of both physical and social benefits, as well as overall attitude towards the gains through their services (Kim & Ling, 2017). Evidence suggests that drop out behaviour in sport can largely be attributed to a customer's failure to generate and acknowledge positive health-related outcomes (Corbin, 1981; Dishman, 2001). Outcome quality is thus shown as not only relevant, but pivotal to the understanding and successful management of service quality within fitness facilities. A further focus and evaluation of service quality attributes and dimensions may assist in isolating the relative importance of outcome quality. As a bridge, the Howat and Assaker (2016) framework reflects an evolved conceptualisation of service quality within a fitness facility context. This framework and corresponding implications are discussed further next.

2.8.3 An Evolved Conceptualisation of Service Quality

Conceptual models that comprehensively define key components of customer loyalty, such as service quality and customer satisfaction, are sought after in sport and fitness contexts (Theodorakis, et al., 2014). Sport and fitness organisations must be concerned not only with how satisfied their customers are, but also with how and why those customers have become satisfied (Van Leeuwen, et al., 2002). Before Howat and Assaker (2016), studies largely evaluated service quality as a higher-order reflective construct (Avourdiadou & Theodorakis, 2014; Clemes, et al., 2011; García-Fernández, et al., 2018; Polyakova, 2016; Theodorakis, et al., 2014; Yu, et al., 2014). As a result, limited assessment of the influence of distinct dimensions of service quality on overall satisfaction, as separate second-order variables, is evident (Theodorakis, et al., 2013). The contribution of Howat and Assaker (2016) demonstrates the merit of investigating both customers' perceptions of the service attributes and the outcomes of service engagement.

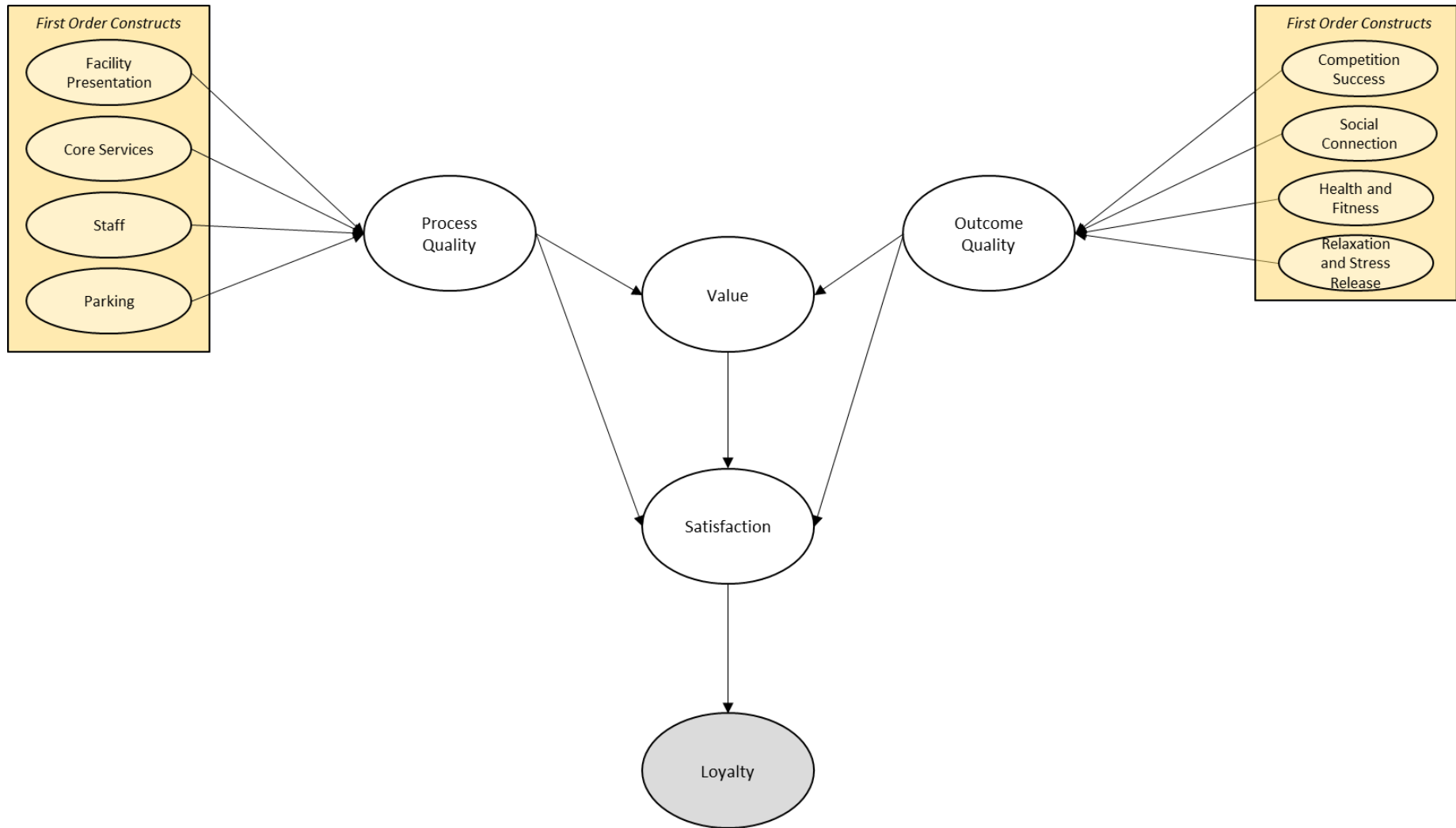
Howat and Assaker (2016) investigate 2,109 customers from eight different public aquatic centres in Australia to develop a model of process quality, outcome quality, and value on overall satisfaction and loyalty. This research adapts widely accepted service quality models for sport and recreation contexts (Alexandris, et al., 2004; Brady, et al., 2006; Murray & Howat, 2002; Theodorakis et al., 2014) and extends Howat and Assaker's (2013) model. Results sought to validate the relative impact of higher-order process quality and outcome quality dimensions alongside value as antecedents to loyalty mediated by overall satisfaction. The comprehensive and relevant inclusion of constructs within this framework position it as meaningful for examination in the current context. The proposed model of process quality, outcome quality, and value on overall satisfaction and loyalty is presented in Figure 2.1.

Howat and Assaker's (2016) results permitted a clear distinction between process quality and outcome quality dimensions and enabled a discrete approach to dimension

construction. This framework design saw validation of four out of the five initially proposed lower-order outcome quality dimensions, namely: health and fitness, competition success, social, and relaxation and stress release. In this case, skill and self-esteem could not be validated as a separate outcome quality sub-dimension of its own merit and was therefore excluded from the final model. Results emphasised lower-order process quality dimensions, core services, and staffing, as significant. Additionally, social connection and health and fitness benefits are emphasised as significant lower-order outcome quality dimensions for explaining customer satisfaction. Examination of these constructs and their significance is useful in developing a consistent, industry-fit conceptualisation of service quality, considering the unique features of sport services.

The Howat and Assaker (2016) framework presents a number of contributions and considerations for future research. Overall, the framework demonstrates generally significant relationships for the higher-order process quality and outcome quality dimensions, as well as value, as antecedents to loyalty mediated by overall satisfaction. However, while the Howat and Assaker (2016) framework is useful, it fails to present a view of the *role of behaviour in the development of loyalty*, or subsequent outcomes such as retention. Therefore, there is a need to enhance conceptualisation, to consider the interrelationships between attitudinal constructs, such as those defined by Howat and Assaker (2016), and behaviour. To enhance conceptualisation and link key research objectives, SCT is a theoretical framework with merit.

Figure 2.1 The proposed model of process quality, outcome quality, and value on overall satisfaction and loyalty (Howat & Assaker, 2016)



2.9 Social Cognitive Theory

The capacity to learn by observation enables people to acquire large, integrated patterns of behaviour without having to form them gradually by tedious trial and error.

(Bandura, 1977, p.12)

Bandura's theory, originally titled Social Learning Theory (SLT), epitomises the belief that humans have to capacity to learn through observation (Bandura, 1977). This approach to observational or 'social' learning is considered as a synthesis of cognitive and behavioural learning theories (Gibson, 2004; Lefrancois, 1999; Sims & Lorenzi, 1992). Social Learning Theory therefore recognises "our ability to think, to symbolize, to figure out cause-effect relationships, to anticipate the outcomes of behavior" (Lefrancois, 1999, p.41). Through its inherent combination of principles of classical and operant conditioning, and cognitive-based dispositional determinants of behaviour (Ginter & White, 1982), SLT has been referred to as both a traditional theory of adult learning (Merriam & Caffarella, 1999), and a metatheory of learning for human resource development (Swanson & Holton, 2001).

Due to a breadth of empirical investigation across a variety of research disciplines, Bandura's Social Learning Theory (SLT) was relabelled as Social Cognitive Theory (SCT) in 1986 (Bandura, 1986). Since its conception, Bandura's SLT had primarily focused on learning situations over an individual's life span (e.g., Bandura, 1982; 1986; Holland & Kobasigawa, 1997; Stajkovic & Luthans, 1998b). The intent of renaming to SCT was to promote the comprehensive nature of the theory's application. Corroborating its amended name, SCT has been leveraged within strategic management (Ginter & White, 1982), classroom instruction studies (Crittenden, 2005), organisational behaviour (Davis & Luthans, 1980), and sales management (Onyemah, et al., 2010). It should be noted that for the purpose

of current research, the term SCT will be employed throughout discussion, as opposed to the preceding term SLT (Bandura 1977; 1986).

The premise of SCT is that human behaviour is shaped and controlled by continuous reciprocal interactions between individual, behavioural, and environmental influences (Crittenden, 2005; Davis & Luthans, 1980; Ginter & White, 1982). These reciprocal relationships propose that individual, environmental, and behavioural influences enact a pattern, or sequence, of behaviour (Bandura, 1977). When describing this pattern, an individual can be said to pay attention to a stimulus in the environment, accordingly, recall the perceived behaviour, exhibit the behaviour, and finally, receive a consequence which influences the probability of repeat behaviour (Hanna, et al., 2013). Observation of such behaviour pattern has been supported within violent or unstable family structures (Anderson & Kras, 2007; Bandura, 1973; Miller & Dollard, 1941; Siegel, 2000) and in skill development (McKee, et al., 1992). Relevant to the current context, the reciprocal nature of SCT influences has been leveraged to predict physical activity and exercise adherence behaviour, as well as utilised in physical activity intervention design (Hatchett, et al., 2013). In particular, each reciprocal influence, outlined below, is presented as highly related to the cognitive processes that guide individual exercise behaviour.

First, SCT considers *individual influences* as consisting of basic cognitive and affective human capacities, such as outcome expectancy, self-efficacy, and self-regulation (Ozmete & Hira, 2011). Outcome expectancy is an individual influence that determines the initiation and maintenance of behaviour (Lippke, 2017). Outcome expectancy values refer to the beliefs surrounding the expected consequence of one's own behaviour (Bandura, 2004). A person expects certain outcomes to result from behaviour, with these expectations determining behaviour execution (Yakut, 2019). SCT has been described as generally

consisting of three outcome categories: physical effects (e.g., pleasure and discomfort), social effects (e.g., social recognition and applause), and self-evaluation effects (e.g., self-satisfaction) (Lin & Chang, 2018). The characteristics that define outcome expectations are context-specific (Lin & Chang, 2018), and therefore research must seek to understand those outcomes of exercise that are persuasive in promoting exercise adherence. In an exercise context, examples of physical and functional benefits include improved functional capacity, increased muscle strength, and reduced fatigue. Social effects may be social recognition by family and friends, social engagement opportunity, and self-evaluation benefits. Finally, emotional responses to exercise behaviour can include improvements in overall quality of life and decreases in anxiety and depression. An enhanced understanding of the predictors of physical activity, and therefore the related outcome expectancy values, allows for more appropriate and effective intervention design (Hatchett, et al., 2013). The distinction of *individual influences*, as demonstrated by outcome expectancy, can be likened to the *outcome quality* dimension proposed by Howat and Assaker (2016). This is derived from both frameworks' intent to evaluate expected outcomes resulting from behaviour.

Self-efficacy is defined as the “judgement of one’s capability to accomplish a certain level of performance” (Bandura, 1986, p.391), or as the belief an individual has in their ability to organise and execute specifically designated behaviour (Hallam & Petosa, 2004). An individual’s interactions with the environment and others is influenced by self-efficacy (Gibson, 2004; Lefrancois, 1999), and is not shaped uniformly across situational contexts (Bandura, 2012; Ng & Lucianetti, 2016). Additionally, self-efficacy is depicted as the belief of success despite challenges and failures when applied in a learning environment. Therefore, a high perception of self-efficacy has been associated with persistence and the ability to endure obstacles (Gibson, 2004). Self-efficacy was further distinguished conceptually in Section 2.4.

As an individual influence, self-regulation is defined as regulation of goal-oriented behaviour or performance (Hallam & Petosa, 2004), as well as a person's perceived capability to control or influence barriers, emotional states, and patterns of behaviour (Ring & Kavussanu, 2018). As a concept, self-regulation suggests that by actively envisioning situational consequences, an individual can regulate their own behaviour (Bandura, 1977; 1986). Within an exercise adherence context, self-regulation is a key factor in the behaviour change process, evident through both an individual's capability to overcome personal and situational barriers to exercise (Hallam & Petosa, 2004), and an ability to establish strategies to realise health goals (Bandura, 2005; Mailey, et al., 2016). In support of this definition, self-regulatory strategies have been identified as significant predictors of exercise participation among mothers (Dlugonski & Motl, 2014; Mailey, et al., 2016). These studies present a correlation between overcoming challenging barriers, exercise prioritisation, and higher levels of self-efficacy, consistent with the SCT perspective (Cramp & Brawley, 2006; Mailey, et al., 2016).

Second, SCT considers the importance of the *environmental influences*, represented by physically external factors that can encourage or discourage a person's behaviour (Carillo, 2010). These factors include the social environment (e.g., family members, friends, and colleagues), physical environment (e.g., room size, temperature, and availability of services) and context-related situational factors (Yakut, 2019). Environmental influences provide a framework for understanding the cognitive representations of the environment that can affect behaviour. The distinction of *environmental influences* can be likened to the *process quality* dimension proposed by Howat and Assaker (2016). This is derived from both frameworks' dual intent to evaluate tangible and intangible service quality attributes.

Finally, SCT considers the importance of the *behavioural influences*, as depicted through behavioural patterns and past behaviour, in the development of attitudes and future behaviours. Despite relevance, behavioural influences have largely been considered as independent, and individual and environmental influences as dependent. As a result, future work is necessary to adequately address and evaluate behavioural influences as both an outcome or affect and as a cause of behaviour (Phipps, et al., 2013).

The interrelationships between individual, environmental, and behavioural influences of SCT are considered as reciprocal determinism (Bandura, 1986). Development of behaviour activation and direction through cognition and environmental inducements and constraints (Bandura, 1979) is applicable to a fitness facility context. This view encourages a more holistic view of the development of attitudes and behaviour, and how they interrelate to shape future behaviour.

2.10 Summary of Literature and Research Gaps

This chapter has reviewed and synthesised extant literature relating to customer service perceptions, engagement, and behaviour in the context of fitness facilities. This review included a focus on member retention as well as a number of determinants, including exercise behaviour, self-efficacy, loyalty, perceived value, satisfaction, service quality, and SCT. Delineation of these constructs informs the theoretical foundation of the current research and poses a number of significant research contributions and gaps.

First, despite support for the necessity of attitudinal and behaviour constructs in promoting member retention, limited consensus exists with regards to the empirical determinants of member retention.

Second, where the majority of similar research has looked at loyalty attitudes or intentions only, an SCT approach encourages deeper consideration of behaviours as well as individual and environmental factors. Such theoretical integration enables research to contribute to the existing gap where behaviour is evaluated largely as an outcome or effect, as opposed to a cause of behaviour initiation and maintenance (Phipps, et al., 2013).

Third, though loyalty indicators present value *if* they are able to successfully predict behaviours (East, et al., 2005), there is a conspicuous lack of support for the predictive power of this relationship in wider sport and leisure settings (Baker, et al., 2018; Zaharia, et al., 2016). While both attitudinal and behavioural components of loyalty are posed as important (Dick & Basu, 1994), existing research inadequately considers these constructs concurrently in a fitness facility context. In sum, further work is needed to delineate the role of loyalty constructs in a fitness facility context, in particular for explaining member retention behaviour.

In addition, an overview of service quality was presented, inclusive of distinct constructs: process quality and outcome quality. A gap resides in the absence of a unifying theory or conceptualisation of the service quality construct. In light of this research gap, the Howat and Assaker (2016) model was reviewed. Validation of key relationships within this model inform this current research, providing a platform to evaluate and enhance understanding of exercise adherence and member retention. Improved understanding of service quality has the potential to generate valuable insights for both academics and practitioners.

Based on the research gaps identified, this research proposes an evaluation and expansion of the Howat and Assaker (2016) model, integration of an SCT approach to behaviour, and assessment of member retention determinants uniquely through the lens of

both attitudinal and behavioural data. This proposed framework that informs the research is presented in Chapter 3.

CHAPTER 3: CONCEPTUAL FRAMEWORK

3.1 Introduction

This chapter presents the conceptual frameworks that evaluate member retention and its antecedents in a fitness facility context. Specifically, this chapter furthers the contextual background provided in Chapter 2 and considers the subsequent relationships between key academic concepts related to member retention. Due to the complexities of research, the conceptualisation is presented in three distinct research stages. Each stage is established through a conceptual framework, each with specific research hypotheses.

The three stages are shaped by central research themes. Within a sport and leisure context, many conceptualisations of service quality exist (e.g., Avourdiadou & Theodorakis, 2014; Chang & Chelladurai, 2003; Chelladurai, et al., 1987; García-Fernández, et al., 2018; Jasinskis, et al., 2013; Ko & Pastore, 2005; Tsitskari, et al., 2014; Tsitskari, et al., 2017; Yildiz, 2011); however, examination discerned the genesis, context, and results of Howat and Assaker's (2016) study as a comprehensive research foundation. Therefore, Research Stage One involves validation of an existing service quality, value, satisfaction, and loyalty model by Howat and Assaker (2016), and assessment of its applicability in explaining member retention. Research Stage Two applies a Social Cognitive Theory (SCT) approach to then test enhancements to this base conceptualisation. Conceptual enhancements include the assessment of self-efficacy, self-reported attendance behaviour, and evaluation of the role of multi-dimensional loyalty in explaining member retention. Finally, Research Stage Three uniquely assesses the role of observed attendance behaviour in explaining member retention. The assessment of observed attendance behaviour in service quality models is a novel contribution of this research. Overall, research aims to ensure a rich, detailed, and robust

examination of member retention and its determinants. A summary of research hypotheses and stages is presented in Section 3.5.

3.2 Research Stage One: Conceptual Development

Research Stage One examines customer perceptions and attitudes through a direct replication of Howat and Assaker's (2016) model. Specifically, this replication seeks to contextually affirm model relevance for explaining member retention, addressing concern of a lack of theoretical development connecting to existing research (Funk, 2017). As per Howat and Assaker (2016), service quality is reflected as two distinct dimensions: process quality and outcome quality. To enhance past work, Research Stage One empirically extends the Howat and Assaker (2016) model, which culminated in the determination of loyalty, to examine member retention. This advance permitted evaluation of the role of measured constructs for explaining member retention, not previously considered within the Howat and Assaker (2016) model. While mediating relationships will be assessed, focus is given to direct relationships within the model. The conceptual model proposed for Research Stage One is presented in Figure 3.1, with the following sections detailing key construct relationships and associated hypotheses.

The following research question will be explored throughout Research Stage One:

***RQ1:** How effective are current conceptualisations of service quality and loyalty for explaining member retention in a fitness facility context?*

3.2.1 Service Quality

While numerous service quality models have been proposed (e.g., Avourdiadou & Theodorakis, 2014; Chang & Chelladurai, 2003; Chelladurai, et al., 1987; García-Fernández et al., 2018; Howat & Assaker, 2013; 2016; Jasinskis, et al., 2013; Ko & Pastore, 2005;

Tsitskari, et al., 2014; Yildiz, 2011), contention still exists for a universal conceptualisation and assessment of service quality. To address this, the current research replicates service quality dimensions proposed by Howat and Assaker (2016).

Specifically, conceptualisation assesses four lower-order process quality dimensions: facility presentation, core services, staff, and parking; and four lower-order outcome quality dimensions: competition success, social connection, fitness and health, and relaxation and stress release. These lower-order dimensions, and corresponding subdimensions, have been validated by Howat and Assaker (2016), and proposed as key antecedents to customer satisfaction (Howat & Assaker, 2013; 2016). Through replication of model constructs, the current research investigates the following hypotheses:

H1: Process quality has a direct, positive effect on overall satisfaction.

H2: Outcome quality has a direct, positive effect on overall satisfaction.

3.2.2 Satisfaction

Satisfaction, considered as the overall feelings towards the customer's cumulative experience with a service (Li & Petrick, 2010), is widely adopted and measured within the Fitness Industry. While the relationship between satisfaction and loyalty has been supported by practitioners and academics (Clemes, et al., 2011; Cronin, et al., 2000; Dagger, et al., 2007; Parasuraman, et al., 1988), the strength and direction of this relationship is not universally agreed (Oliver, 1999). Therefore, through replication of the Howat and Assaker (2016) model, the following hypothesis is proposed:

H3: Overall satisfaction has a direct, positive effect on loyalty.

3.2.3 Loyalty

Replication of the Howat and Assaker (2016) model defines loyalty as favourable attitudes held by customers towards a fitness facility. While such attitudinal loyalty indicators are valuable *if* they are able to successfully predict behaviours (East, et al., 2005), recent work emerging within the wider sport and leisure setting suggest loyalty indicators as useful but potentially poor predictors of actual behaviour (Alexandris, et al., 2001; Baker, et al., 2018; Zaharia, et al., 2016). Therefore, while the Howat and Assaker (2016) model culminates in the assessment of loyalty, the current research advances the model, empirically testing the relationship between loyalty indicators, and member retention. This advance gives rise to the following hypothesis:

H4: Loyalty has a direct, positive effect on member retention.

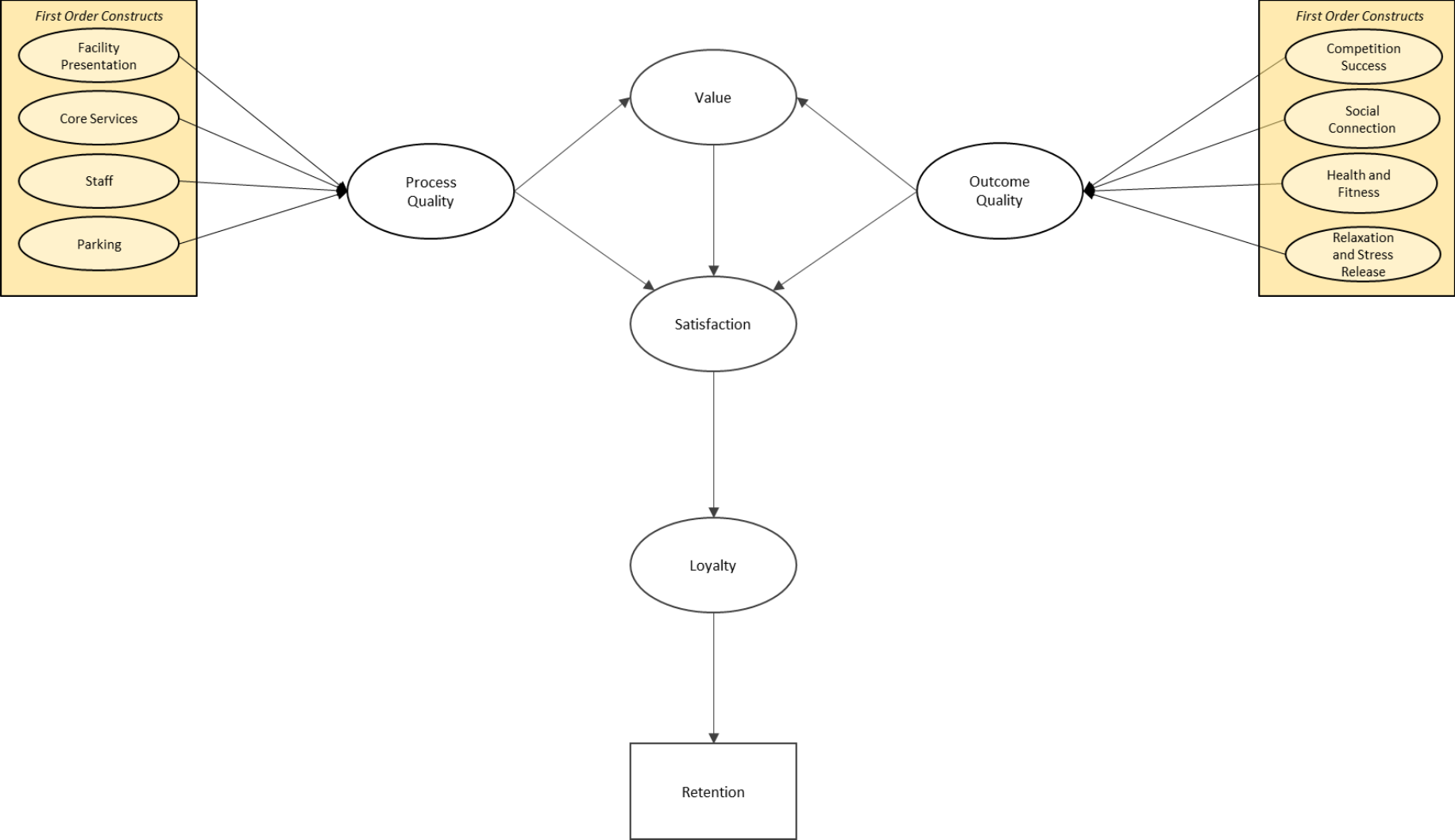
3.2.4 Conclusion

Replication of Howat and Assaker's (2016) model supports theoretical development connecting to existing research, and intends to provide an improved understanding of member retention. Specifically, research seeks to assert the role of constructs – process quality, outcome quality, satisfaction and loyalty – for explaining member retention in a fitness facility context. Assessment of the impact of these constructs for explaining member retention behaviour is a unique advance of this research. The Research Stage One hypotheses are aggregated in Table 3.1, followed by the conceptual framework in Figure 3.1.

Table 3.1 Research Stage One Summary of Hypotheses

H1	Process quality has a direct, positive effect on satisfaction.
H2	Outcome quality has a direct, positive effect on satisfaction.
H3	Overall satisfaction has a direct, positive effect on loyalty.
H4	Loyalty has a direct, positive effect on member retention.

Figure 3.1 Research Stage One Conceptual Model



3.3 Research Stage Two: Conceptual Development

Building on past work, Research Stage Two integrates an SCT view of behaviour facilitation and maintenance and tests the ability of constructs to explain member retention. Specifically, the integration of SCT is intended to produce a more holistic and meaningful view of the reciprocal interactions between individual, environmental, and behavioural influences. To adequately embed an SCT understanding, a number of ancillary considerations are adopted. These considerations include self-efficacy, self-reported attendance behaviour, and distinction of the loyalty construct. While mediating relationships will be assessed for these additional constructs, focus is given to direct relationships within the model. The following section articulates the Research Stage Two hypotheses, concluding with the proposed conceptual model in Figure 3.2. The research question explored throughout Research Stage Two is:

***RQ2:** How do self-efficacy, self-reported attendance behaviour, and multi-dimensional loyalty enhance the explanation of member retention in a fitness facility context?*

3.3.1 Service Quality

SCT proposes adherence behaviour is shaped and controlled by continuous reciprocal interactions between individual, environmental, and behavioural influences (Bandura, 2001; Crittenden, 2005; Davis & Luthans, 1980; Ginter & White, 1982). This means that to enhance understanding of member retention behaviour, a focus on the reciprocal interactions of SCT influences is necessary.

In a fitness facility context, tangible and intangible service touchpoints can be considered as environmental inducements and constraints that shape the activation and direction of behaviour. Within the current research, these environmental inducements and

constraints are assessed as process quality dimensions and are replicated from Howat and Assaker (2016). Replication assesses four lower-order process quality dimensions: facility presentation, core services, staff, and parking. Through integration of an SCT view of behaviour, environmental influences, or process quality, are conceptually related to individual influences, such as self-efficacy. This suggests that if a customer positively perceives the service environment and offering, they are more likely to perceive that they are capability of producing a behaviour.

Further, outcome expectancy is viewed as an integral individual influence for behaviour initiation and maintenance (Lippke, 2017). In the current context, outcome expectations are replicated from Howat and Assaker (2016) through a view of outcome quality. This replication investigates four lower-order outcome quality dimensions: competition success, social connection, health and fitness, and relaxation and stress release. Conceptually, these lower-order dimensions, and corresponding subdimensions, explain expected outcomes resulting from behaviour, and contribute to determining whether behaviour is executed (Yakut, 2019). Derived from this understanding, it is proposed that if outcomes of engagement are perceived positively, this will impact self-efficacy perceptions.

In sum, the proposal that self-efficacy beliefs are constantly shifting and adapting to incoming information from the environment, as well as individual outcome expectations, gives rise to the following hypotheses:

H5: Process quality has a direct, positive effect on self-efficacy.

H6: Outcome quality has a direct, positive effect on self-efficacy.

3.3.2 Satisfaction

Although literature supports satisfaction as a significant antecedent to customer loyalty, the relationship of satisfaction with attitudinal loyalty and behavioural loyalty constructs have mostly been studied separately. In other words, while satisfaction has been positively related to commitment (Cronin, et al., 2000; Lee, et al., 2011; Tian-Cole, et al., 2002) and service recommendation (Howat, et al., 1999), few studies have evaluated these relationships concurrently. The current research seeks to enhance understanding of the role of satisfaction in explaining loyalty as a multi-dimensional construct. This concurrent assessment drives the following hypotheses:

H7: Overall satisfaction has a direct, positive effect on attitudinal loyalty.

H8: Overall satisfaction has a direct, positive effect on behavioural loyalty.

3.3.3 Self-Efficacy

Self-efficacy, proposed as an individual influence of SCT, has been positioned as a key determinant of the initiation and maintenance of behaviour (Bandura, 2004). More specifically, support has been shown for self-efficacy as a determinant of exercise behaviour (Kaewthummanukul & Brown, 2006; Sallis, et al., 1992; Sharma & Sargent, 2005; Strachan, et al., 2005; Rovniak, et al., 2002). Based on the positioning of self-efficacy within SCT and the findings of previous literature, the current research predicts a direct, positive relationship between self-efficacy and self-reported exercise behaviour in a fitness facility context. The related hypothesis is posed:

H9: Self-efficacy has a direct, positive effect on self-reported attendance behaviour.

3.3.4 Self-Reported Attendance Behaviour

An SCT approach encourages deeper consideration of behaviours as well as individual and environmental factors. Specifically, the integration of behaviour is intended to assess the role of past behaviour in predicting future behaviour. This advance is in line with increasing focus to the assessment of behaviour within sport and leisure management (Katz et al., 2020; McDonald, 2010). Investigation of self-reported attendance behaviour, as a cause of behaviour, identifies the relevance of behavioural patterns and past behaviour in the development of attitudes and future behaviours. An understanding of behaviour as not only an outcome or effect, but as a cause of behaviour facilitation and maintenance derives the following hypotheses:

H12: Self-reported attendance behaviour has a direct, positive effect on attitudinal loyalty.

H13: Self-reported attendance behaviour has a direct, positive effect on behavioural loyalty.

H14: Self-reported attendance behaviour has a direct, positive effect on member retention.

3.3.5 Loyalty

While loyalty has been widely researched within sports and leisure literature (Alexandris, et al., 2004; Clemes, et al., 2011; Howat & Assaker, 2013; 2016), conceptualisation of a single loyalty construct has more generally been criticised as inadequately capturing the concept (Dick & Basu, 1994; Keller & Lehmann, 2006; Oliver, 1997). As a result, Research Stage Two conceptualises a multi-dimensional loyalty construct, considering both attitudinal loyalty and behavioural loyalty. This view contrasts Howat and Assaker's (2016) definition. Despite customer loyalty being proposed as imperative for customer retention (Alexandris, et al., 2002; Caruana, 2002), attitudinal loyalty indicators (Bodet, 2008) and behavioural loyalty indicators (Alexandris, et al., 2001; Baker, et al., 2018; McDonald, et al., 2014; Zaharia, et

al., 2016) have been suggested as useful but poor predictors of actual behaviour. Therefore, evaluation of the role of distinct loyalty constructs – as determinants of member retention – appears a worthy endeavour. Therefore, it is proposed that both attitudinal loyalty and behavioural loyalty will have a positive effect on member retention. This proposal gives rise to the following hypotheses:

H15: *Attitudinal loyalty has a direct, positive effect on member retention.*

H16: *Behavioural loyalty has a direct, positive effect on member retention.*

3.3.6 Conclusion

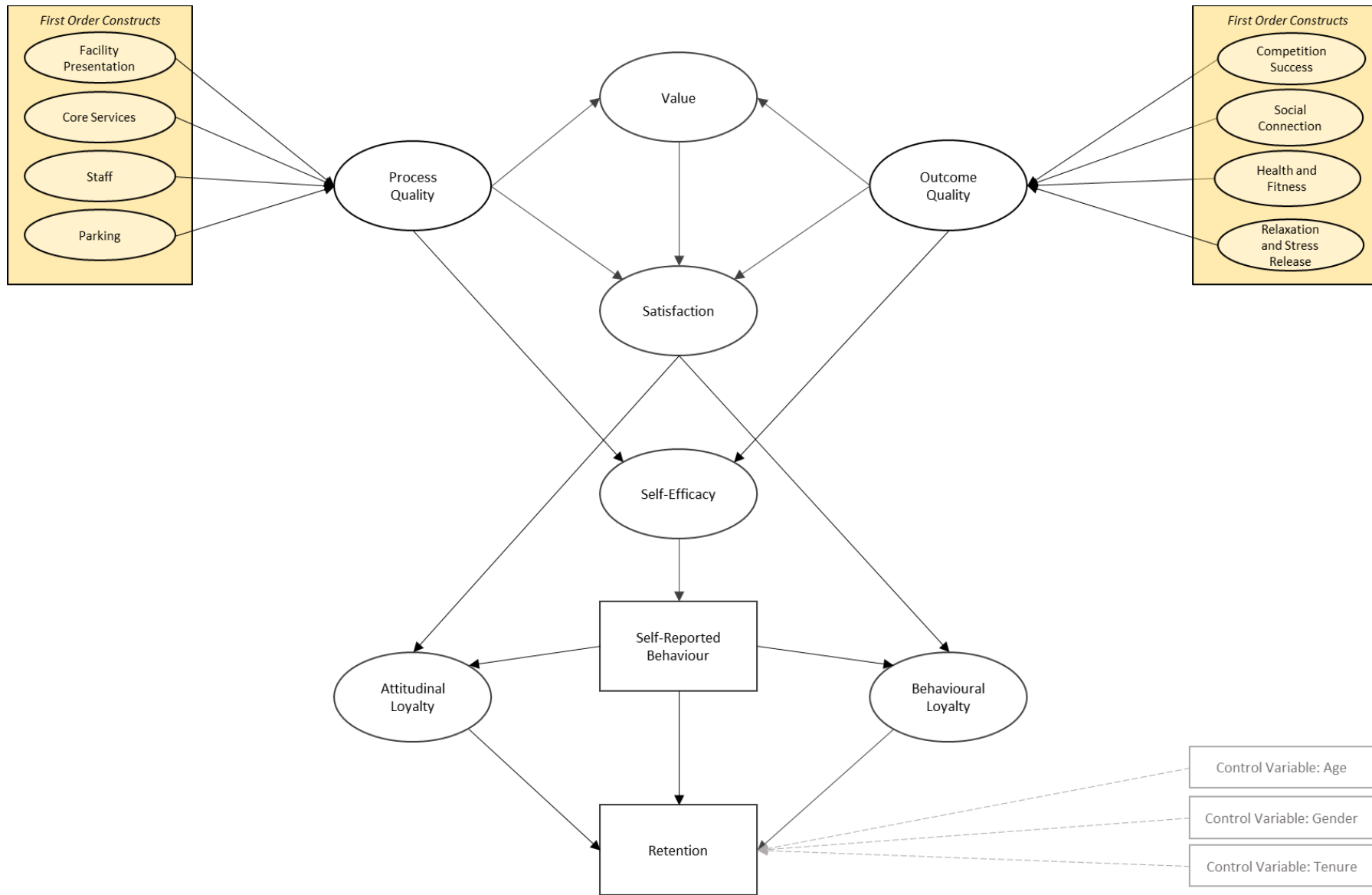
Research Stage Two conceptualises key research contributions. *Firstly*, adequate integration of SCT ascertains empirical examination of individual, environmental, and behavioural influences of behaviour. *Secondly*, the proposal of loyalty as a multi-dimensional construct, comprising attitudinal loyalty and behavioural loyalty, enables greater distinction of the role of constructs in explaining member retention. *In sum*, research seeks to assert the role of constructs – process quality, outcome quality, satisfaction, self-efficacy, self-reported attendance behaviour, attitudinal loyalty and behavioural loyalty – for explaining member retention in a fitness facility context. Again, evaluation of the role of constructs for explaining member retention behaviour is a unique aspect of research and seeks to advance assessment of behaviour and member retention within sport and leisure management. The conceptual framework for Research Stage Two is presented in Figure 3.2, with a summary of hypotheses outlined below in Table 3.2.

Table 3.2 Research Stage Two Summary of Hypotheses

H5	Process quality has a direct, positive effect on self-efficacy.
H6	Outcome quality has a direct, positive effect on self-efficacy.
H7	Overall satisfaction has a direct, positive effect on attitudinal loyalty.
H8	Overall satisfaction has a direct, positive effect on behavioural loyalty.

H9	Self-efficacy has a direct, positive effect on self-reported attendance behaviour.
H10	Self-reported attendance behaviour has a direct, positive effect on attitudinal loyalty.
H11	Self-reported attendance behaviour has a direct, positive effect on behavioural loyalty.
H12	Self-reported attendance behaviour has a direct, positive effect on member retention.
H13	Attitudinal loyalty has a direct, positive effect on member retention.
H14	Behavioural loyalty has a direct, positive effect on member retention.

Figure 3.2 Research Stage Two Conceptual Model



3.4 Research Stage Three: Conceptual Development

Research Stage Three advances previous research, which predominantly focuses on the measurement and use of self-reported attitudes, intentions, and behaviours, as opposed to objective, observed behaviour collected in practice (Ostrom, et al., 2015). To address this disproportional assessment, a view of observed attendance behaviour is employed concurrently with attitudinal constructs to delineate retention as a defined outcome of loyalty. Assessment through a combination of data sources attempts to procure a more reliable interpretation of member retention determinants in a fitness facility context. While mediating relationships will be considered for observed attendance behaviour, focus is given to direct relationships within the model. The Research Stage Three conceptual framework is presented in its entirety in Figure 3.3.

The following research question will be explored throughout Research Stage Three:

***RQ3:** How does observed attendance behaviour enhance the explanation of member retention in a fitness facility context?*

3.4.1 Self-Efficacy

Within Research Stage Two, self-efficacy has been positioned as a key determinant of the initiation and maintenance of behaviour (Bandura, 2004). Specifically, Research Stage Three enhances evaluation by exploring the role of self-efficacy as a determinant of observed attendance behaviour. This is as opposed to self-reported attendance behaviour measured within Research Stage Two. The corresponding hypothesis is cultivated from past research stages, and is presented as follows:

***H15:** Self-efficacy has a direct, positive effect on observed attendance behaviour.*

3.4.2 Observed Attendance Behaviour

SCT encourages deeper consideration of behaviours as both a cause, as well as an outcome or effect, of behaviour. This means that to predict future behaviour, a review of past behaviour is necessary. Within Research Stage Three, this view is addressed through evaluation of observed attendance behaviour. Specific to sport and leisure research, observed behaviour has been shown to be valuable where frequent attendance has been proposed as positively associated to retention (San Emeterio, et al., 2016; Yi, et al., 2020), and as mediating the relationship between satisfaction and behavioural intention (Ferrand, et al., 2010). While relationship significance has been supported in some instances, this has not been unanimous (Gonçalves, et al., 2016). In addition, few studies explore the role of attitudinal and behavioural data concurrently, as determinants of member retention. Therefore, the current research proposes observed attendance behaviour as a useful mechanism to explore the determinants of member retention. This assertion derives the following hypotheses:

H16: Observed attendance behaviour has a direct, positive effect on attitudinal loyalty.

H17: Observed attendance behaviour has a direct, positive effect on behavioural loyalty.

H18: Observed attendance behaviour has a direct, positive effect on member retention.

3.4.3 Conclusion

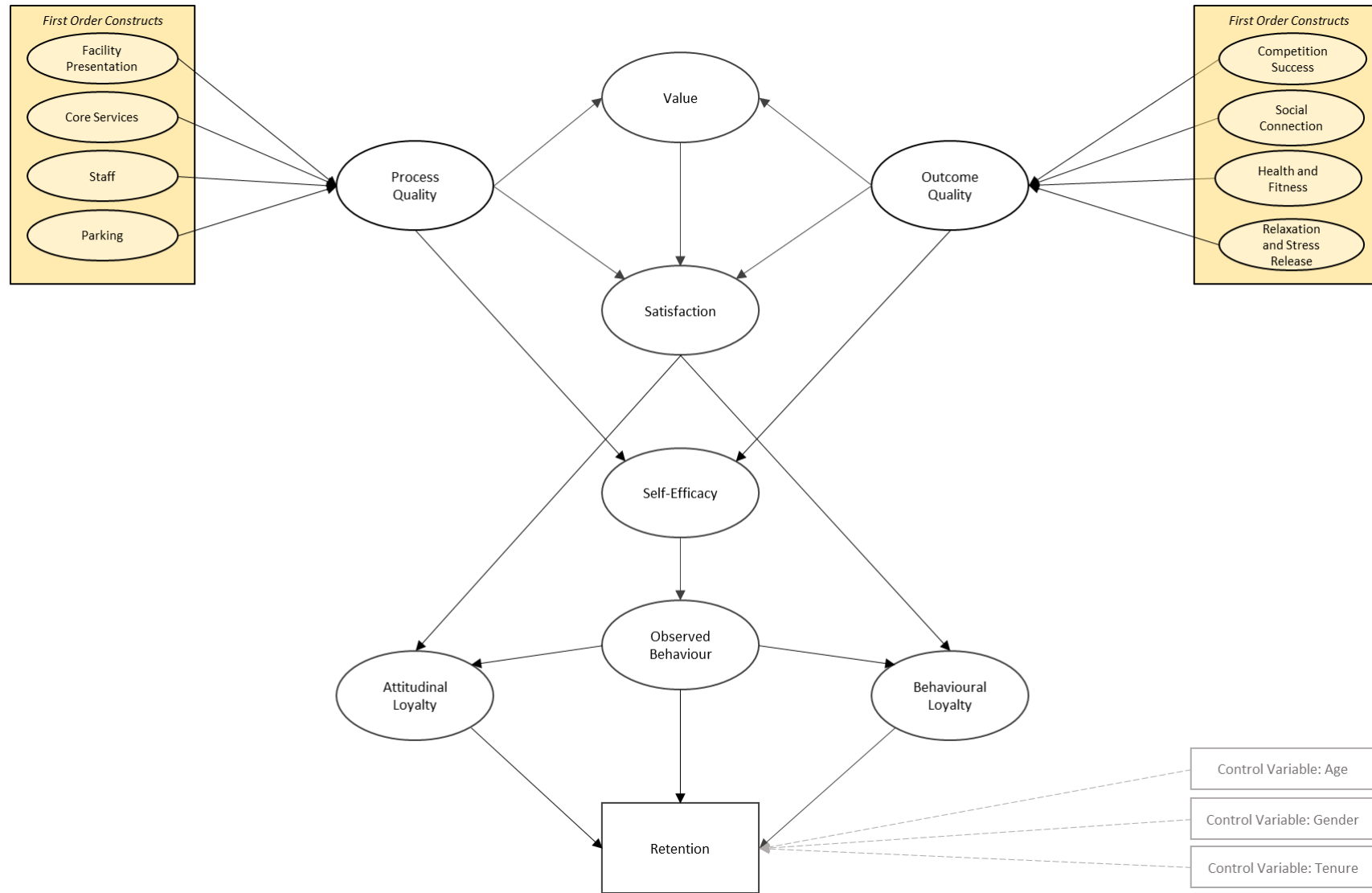
Where previous research focuses on the measurement and use of self-reported attitudes, intentions, and behaviours, current research extends conceptualisation, assessing observed attendance behaviour as a determinant of member retention. Through consideration of attitudinal and observed behavioural data concurrently, reliable interpretation of member retention in a fitness facility context ensues. This assessment is a novel contribution of this research that seeks to advance assessment of behaviour and member retention, within sport

and leisure management. The conceptual framework for Research Stage Three is presented in Figure 3.3, with a summary of hypotheses outlined below in Table 3.3.

Table 3.3 Research Stage Three Summary of Hypotheses

H15	Self-efficacy has a direct, positive effect on observed attendance behaviour.
H16	Observed attendance behaviour has a direct, positive effect on attitudinal loyalty.
H17	Observed attendance behaviour has a direct, positive effect on behavioural loyalty.
H18	Observed attendance behaviour has a direct, positive effect on member retention.

Figure 3.3 Research Stage Three Conceptual Model



3.5 Summary of Research Questions

This research addresses the following primary research question:

How do service quality, loyalty, and behaviours, as examined through a Social Cognitive Theory approach, influence member retention in a Fitness Facility specific context? This research question is represented by the following sub-questions:

- **RQ1:** How effective are current conceptualisations of service quality and loyalty for explaining member retention in a fitness facility context?
- **RQ2:** How do self-efficacy, self-reported attendance behaviour, and multi-dimensional loyalty enhance the explanation of member retention in a fitness facility context?
- **RQ3:** How does observed attendance behaviour enhance the explanation of member retention in a fitness facility context?

To enable ease of reference, research sub-questions, as well as research hypotheses, are presented as relevant within their respective research stages in Table 3.4.

Table 3.4 Summary of Proposed Research

Research Question	Hypothesis	Contribution
<p>Research Stage 1: RQ1: How effective are current conceptualisations of service quality and loyalty for explaining member retention in a fitness facility context?</p>	<p>H1: Process quality has a direct, positive effect on satisfaction. H2: Outcome quality has a direct, positive effect on satisfaction. H3: Overall satisfaction has a direct, positive effect on loyalty. H4: Loyalty has a direct, positive effect on member retention.</p>	<p>Replication of the Howat and Assaker (2016) model to assert the relevance for explaining member retention.</p>
<p>Research Stage 2: RQ2: How do self-efficacy, self-reported attendance behaviour, and multi-dimensional loyalty enhance the explanation of member retention in a fitness facility context?</p>	<p>H5: Process quality has a direct, positive effect on self-efficacy. H6: Outcome quality has a direct, positive effect on self-efficacy. H7: Overall satisfaction has a direct, positive effect on attitudinal loyalty. H8: Overall satisfaction has a direct, positive effect on behavioural loyalty. H9: Self-efficacy has a direct, positive effect on self-reported attendance behaviour. H10: Self-reported attendance behaviour has a direct, positive effect on attitudinal loyalty. H11: Self-reported attendance behaviour has a direct, positive effect on behavioural loyalty. H12: Self-reported attendance behaviour has a direct, positive effect on member retention. H13: Attitudinal loyalty has a direct, positive effect on member retention. H14: Behavioural loyalty has a direct, positive effect on member retention.</p>	<p>Integration of a Social Cognitive Theory (SCT) approach to traditional service quality models. Conceptual distinction of the loyalty construct.</p>
<p>Research Stage 3: RQ3: How does observed attendance behaviour enhance the explanation of member retention in a fitness facility context?</p>	<p>H15: Self-efficacy has a direct, positive effect on observed attendance behaviour. H16: Observed attendance behaviour has a direct, positive effect on attitudinal loyalty. H17: Observed attendance behaviour has a direct, positive effect on behavioural loyalty. H18: Observed attendance behaviour has a direct, positive effect on retention.</p>	<p>Unique addition of observed attendance behaviour and analysis of its role in explaining loyalty and retention in a fitness facility specific context.</p>

3.6 Chapter Summary

In this chapter, three distinct stages of research were developed and presented. Specifically, *Research Stage One* replicates the Howat and Assaker (2016) model to affirm relevance for explaining member retention. Grounded from this foundation, *Research Stage Two* integrates an SCT view of behaviour initiation and maintenance. As a novel contribution, this stage of research explores individual, environmental, and behavioural influences of SCT, and proposes a multi-dimensional loyalty construct. Finally, *Research Stage Three* uniquely assesses the role of observed attendance behaviour as a determinant of member retention. This analysis provides unique assessment of member retention through attitudinal and behavioural data concurrently. In summary, the conceptual frameworks provide the ability to explore member retention as an outcome, and its determinants, within a fitness facility context.

CHAPTER 4: METHODOLOGY

4.1 Introduction

Previously, a conceptual model was developed, and research gaps, questions and hypotheses were introduced. This chapter outlines the methods employed to examine research questions and hypotheses, describing the research design, methods used for data acquisition, and justification for the measurement instrument. In addition, this chapter will outline the research setting, sample, data collection, and analysis techniques employed across the three research stages. A summary of this chapter is provided below in Figure 4.1.

Figure 4.1 Methodology Framework



4.2 Research Questions and Hypothesis

The distinctiveness of the research questions identified in the previous chapter led to the development of three individual research stages, each with a focus on member retention as an outcome. A summary of research questions and subsequent hypotheses is provided in Table 4.1.

Table 4.1 Summary of Hypotheses

RQ		Hypothesis	Research Stage One	Research Stage Two	Research Stage Three
RQ1	H1	Process quality has a direct, positive effect on satisfaction.	Y		
	H2	Outcome quality has a direct, positive effect on satisfaction.	Y		
	H3	Satisfaction has a direct, positive effect on loyalty.	Y		
	H4	Loyalty has a direct, positive effect on member retention.	Y		
RQ2	H5	Process quality has a direct, positive effect on self-efficacy.		Y	
	H6	Outcome quality has a direct, positive effect on self-efficacy.		Y	
	H7	Overall satisfaction has a direct, positive effect on attitudinal loyalty.		Y	
	H8	Overall satisfaction has a direct, positive effect on behavioural loyalty.		Y	
	H9	Self-efficacy has a direct, positive effect on self-reported attendance behaviour.		Y	
	H10	Self-reported attendance behaviour has a direct, positive effect on attitudinal loyalty.		Y	
	H11	Self-reported attendance behaviour has a direct, positive effect on behavioural loyalty.		Y	
	H12	Self-reported attendance behaviour has a direct, positive effect on member retention.		Y	
	H13	Attitudinal loyalty has a direct, positive effect on member retention.		Y	
	H14	Behavioural loyalty has a direct, positive effect on member retention.		Y	
RQ3	H15	Self-efficacy has a direct, positive effect on observed attendance behaviour.			Y
	H16	Observed attendance behaviour has a direct, positive effect on attitudinal loyalty.			Y
	H17	Observed attendance behaviour has a direct, positive effect on behavioural loyalty.			Y
	H18	Observed attendance behaviour has a direct, positive effect on member retention.			Y

Research Stage One provides a quantitative analysis of Research Question 1: *How effective are current conceptualisations of service quality and loyalty for explaining member retention in a fitness facility context?* This stage of research replicated the Howat and Assaker (2016) model, evaluating the effectiveness of this service quality and loyalty conceptualisation for explaining member retention in a fitness facility context.

Research Stage Two integrates a Social Cognitive Theory (SCT) view of behaviour facilitation and maintenance. Assessment of the reciprocity of individual, environmental, and behavioural influences seeks to enhance the explanation of member retention. Specifically, Research Stage Two introduces self-efficacy, self-reported attendance behaviour, and a multi-dimensional conceptualisation of loyalty. Research Question 2 is therefore expressed as: *How do self-efficacy, self-reported attendance behaviour, and multi-dimensional loyalty enhance the explanation of member retention in a fitness facility context?*

While previous conceptualisations largely rely on self-reported attitudes, intentions and behaviour, Research Stage Three advances previous research by incorporating and exploring the impact of observed attendance behaviour for explaining member retention. Assessment of observed attendance behaviour in service quality models is a novel contribution, offering objective behavioural indicators: member attendance frequency and consistency. This stage of research examines Research Question 3: *How does observed attendance behaviour enhance the explanation of member retention in a fitness facility context?*

4.3 Research Paradigm

The philosophical underpinning of academic work is pivotal in ensuring intellectual integrity, trustworthiness, and diversity of scholarship (McGregor & Murnane, 2010). A philosophical position is important to outline in academic research, as it provides a basis for inquiry (Creswell & Plano Clark, 2018). Research paradigms are “a set of propositions that explain how the world is perceived” (Sarantakos, 1998, p.38), providing researchers with a framework of associated attendant methodologies to conduct their investigations. To elect the appropriate research paradigm, the research problem and questions must be consulted.

The research questions of this research were guided by previous research. Therefore, the methods employed throughout the current study were selected based on these existing methodologies and research designs. Due to the position of this study as embedded within the natural sciences, research will be considered through the positivistic paradigm.

Within the positivistic paradigm, it is assumed that knowledge can only be considered true if research is conducted through experiment and observation, and therefore derives supporting evidence (Rohmann, 1999). This scientific approach to research depends on objectivity and the view of individuals as objects to be studied and controlled (McGregor & Murnane, 2010). Therefore, adoption of the positivistic paradigm is appropriate for the current research, which employs an objective investigation of human behaviour facilitation and maintenance in a fitness facility context.

4.3.1 Nature of Research: Quantitative vs Qualitative

Having asserted the research paradigm, the next stage of the research methodology is the identification of the nature of the research design. Two research designs exist that determine the approach of data collection and analysis: qualitative and quantitative research.

Qualitative research is the term given to research comprising a multitude of non-statistical research methods of data collection and analysis (Stern & Barley, 1996). This research method intends to evaluate a phenomenon in its natural setting, enabling multiple subjective views, meanings, and perspectives to be gathered (Creswell, 2015). Due to the serendipitous nature of qualitative data, and the tendency to observe and interpret behaviour arbitrarily (Creswell, 2015), this research method is not the most appropriate for investigating attitudes and behaviours in fitness facility context, where consistent parameters are required for accurate investigation.

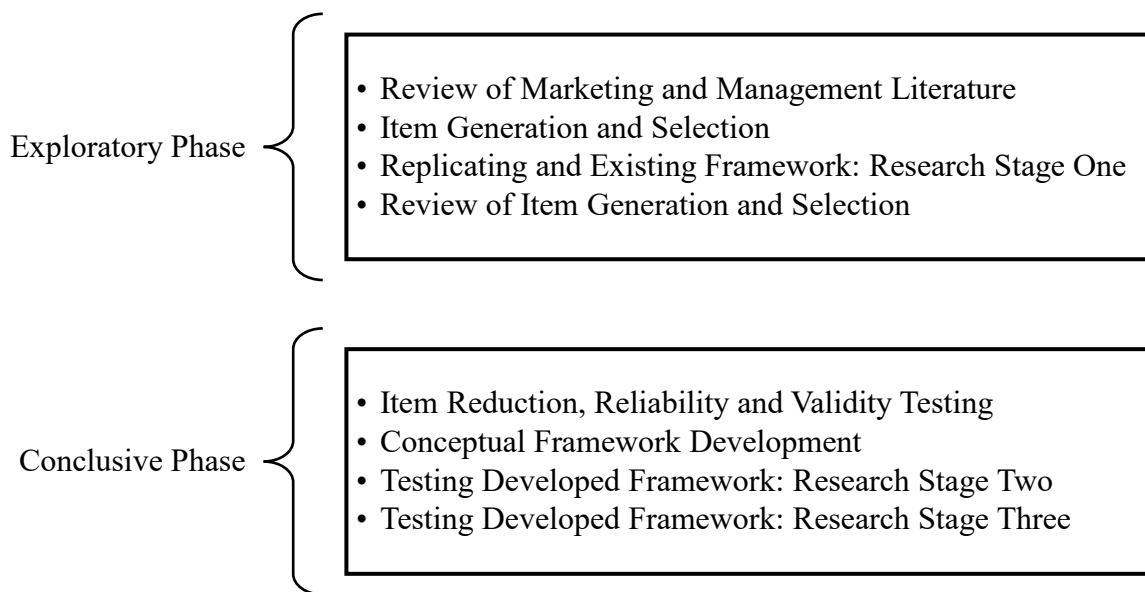
Quantitative research, alternatively, values breadth, statistical descriptions, and generalisability (Leavy, 2017). This research design is most commonly used in explanatory research investigating casual relationships, associations, and correlations (Creswell, 2012). Within sport management and marketing, research has extensively employed quantitative research methods to test and measure constructs. This exemplar research (e.g., Avourdiadou & Theodorakis, 2014; Hill & Green, 2012; Howat & Assaker, 2016; 2013; Kwan & Bryan, 2010; Parasuraman, et al., 1988; Zeithaml & Parasuraman, 1996) provided the impetus for the construction and adaption of the tools employed within the current research. Therefore, a quantitative research design is appropriate in the current context where central themes are identified, and relationships tested and measured (Cavava, et al., 2001; Churchill, 1979). Specifically, scale development and construct and measurement model testing enable the conceptual framework to be assessed for reliability and validity.

This research intends to advance understanding of service quality, loyalty, and member retention in the field of sport and leisure management, through the aforementioned research questions. To develop a rigorous understanding of this phenomenon, it was pertinent to explore both the attitudinal and behavioural perspectives of fitness facility members. In

addition, current research integrates “the purposeful repetition of previous research to corroborate or disconfirm the previous results” (Makel & Plucker, 2014, p.2). In this way, replication of the Howat and Assaker (2016) model in Research Stage One further supports the appropriation of a quantitative research design.

To recapitulate, the current research involves a quantitative empirical study investigating casual relationships and associations of fitness facility member attitudes and behaviours. The exploratory phase of research design reviewed prominent literature to develop and construct the questionnaire items disseminated throughout data collection. This initial phase replicated and evaluated an existing conceptualisation of service quality, value, satisfaction, and loyalty. A subsequent review of item selection, through reliability and validity testing of constructs, permitted research to transition into a conclusive phase. Upon refinement and enhancement of the conceptual framework, data was collected and analysed as per the two remaining research stages. Hypothesis testing concludes data analysis through the proposal of key research contributions. The research design is outlined in Figure 4.2.

Figure 4.2 Overview of Research Design



4.4 Research Context

This section describes and justifies selection of the research context, providing a bridge that links the background and issues relevant to the specific topic of study. The Fitness Industry is considered a subset of the global Sports Industry, which continues to grow in both size and influence as a result of its persuasive relationship and notable impact on the health and wellbeing of individuals (Weed, 2016). The Sport Industry is described as positively influencing health-enhancing physical activity (World Health Organization, 2015). This definition is consistent with that provided by the United Nations, portraying sport as being a “highly effective tool for engaging and empowering individuals, communities and even countries to take action to improve their health” (Sport for Development and Peace, 2008). As such, the Sports Industry and, by extension, the Fitness Industry play a pivotal role in assisting individuals to improve their health and achieve lifestyle goals.

Despite positive associations of exercise for health, the Center for Disease Control (2014) asserts that exercise guidelines are met by only one in five adults. This assertion has repercussions for the physical and mental health outcomes of the population (Penedo & Dahn, 2005; Warburton, et al., 2006), and is associated with morbidity and increased mortality (Verhoef, et al., 2016). In this way, lacking physical activity, combined with the growing rates of obesity-related health problems in our society, suggests that more needs to be done to examine determinants of exercise maintenance and facilitation. The Fitness Industry is well placed as a context for this examination, as it intends to encourage exercise and generate beneficial health and related outcomes. The Fitness Industry has been explored further within the specific scope of an Australian fitness facility.

4.4.1 The Fitness Industry in Australia

The Fitness Industry is a dynamic and important part of the Australian economy. Industry expansion is evident, with a 4.3% growth rate in the number of businesses, and an annual revenue growth rate of 5.8% expected between 2021 and 2026 (Youl, 2020). This expansion includes the increasing prominence of budget gym chains, as well as a proliferation of premium functional fitness gyms that have stimulated the majority of industry growth. Despite this, the top four market share holders account for 42% of total revenue (Youl, 2020). Market saturation has led to heavy competition on the basis of price, quality, marketing, size, location, reputation, and the range of facilities and services offered. Additionally, further competition has stemmed from avenues of organised sport, independent contractors, and other alternatives (Magner, 2016).

Fitness and gym activities are reported as the second-most participated type of sport and recreation activity by Australians (Magner, 2016). It was estimated in 2019 that 6.6 million Australian adults were paying participants of gyms, yoga studios, and pilates classes (Youl, 2020). Determinants of this participation are understood to be discretionary time and income, age, location, weather, general customer trends, and the type and amount of fitness activity already undertaken (Magner, 2016). The extent of participation in Australia supports the influence of the Fitness Industry for promoting health-enhancing exercise behaviour.

The Australian Fitness Industry predominantly comprises health clubs, fitness centres, and gymnasiums (Youl, 2020), and include a variety of membership access. These organisations typically provide membership access to amenities such as weights, cardio, classes, and personal training services. They also face complexities concerning low standardisation of services (Tsitskari & Tsakiraki, 2013). Membership fees represent a unique

service relationship through categorisation as ‘discrete’ or ‘continuous’ (Liljander & Strandvik, 1995), with distinction important for the delineation of member retention.

- **‘Discrete’ services** represent repeat transactions, such as ‘pay as you go’ (Mintel, 2011). This service relationship is evidenced through the growing prominence of budget gyms, which have captured a casual exerciser market.
- **‘Continuous’ services** describe an ongoing contractual agreement, ending only via termination by the member. The outcome of a member continuing their relationship gives the interpretation of retention (Tahtinen & Halinen, 2002).

Further, the management of fitness facilities takes on a number of different constructs, such as: leasing, self-management, or most appropriate for this research, contract management (Arthur, 2010). Contract management describes those fitness facilities owned by local government authorities and operated by commercial and community organisations specialising in facility management (Arthur, 2010). Within the current research design, a full-service fitness facility operated via contract management is investigated; it is detailed in the next section.

4.5 Sample Design

Sampling methods represent tools and choices that provide a representative cross-section of the population to be studied. The process of sampling is therefore the selection of a representative group from the population and can impact extrapolation of results (De Vaus & De Vaus, 2001). To adequately reflect this, identification of the organisational scope and sampling technique is pursued.

4.5.1 Organisational Scope

Prior to the commencement of this research, Swinburne University was approached to instigate a partnership. This partnership proposed a research relationship that intended, specifically, to investigate member attitudes and behaviours, relevant to the partner organisation's contracted facilities. This relationship shaped the organisational scope, and resultantly, the target population of this research. Specifically, as a result of the partnership, research was conducted within a single full-service fitness facility, contract-managed by the partner organisation.

Located in the north-eastern suburbs of Melbourne, Victoria, this full-service fitness facility provides a range of fitness and exercise services to both casual exercise participants and members. These services include a gym, group fitness, indoor sports stadium, aquatic facility, childcare, and cafe. This facility is the largest in the partnered organisation's portfolio and has over 4,200 active members. Such membership scope offered potential to collect data over the largest sample, provide a greater opportunity to analyse cross-group differences, and be representative of the broader population census.

Further, the size of this facility offered valuable access to members operating under a 'continuous' service relationship. As this research intended to investigate member attitudes, and behaviours, individuals who are engaged in an active, 'continuous' were defined as the target population. 'Continuous' service relationships assume prerequisite attitudes and behaviours relevant to the respective fitness facility. It can then be inferred that the target population has some knowledge of Fitness Industry operations. At the time of research, the selected fitness facility had 3,417 active full-service 'continuous' contracts (Table 4.2).

The decision to focus research at this facility was seen as appropriate, and manageable, given the combination of attitudinal and behavioural data sources necessary for

analysis. In addition, the management of this facility by partnered organisation allowed for convenience of participant sampling and data collection. Furthermore, a single facility focus limited those contextual and environmental variables present when assessing multiple facilities that may operate across differing categories (e.g., budget, functional, luxury, or yoga), cultures, or nations.

Table 4.2 Summary of Active 'Continuous' Service Relationships

Membership Type	Total Members	Percentage Members
Complete Membership	3417	81.2%
Aquatic Membership	178	4.2%
Teen Membership	427	10.2%
Other	184	4.4%
Total	4206	-

Note: 'Complete Membership' indicates access to all facility services i.e., gym, group fitness, indoor sports stadium, aquatic facility; 'Aquatic Membership' indicates access to only 'wet' facility services, i.e., aquatic facility; 'Teen Membership' indicates complete facility access by individuals 18 years and under; 'Other' indicates special arrangement memberships.

4.5.2 Sampling Technique

Having identified the organisational scope, it was necessary to select a sampling technique. Within social science research, probability and non-probability exist as sampling technique options. Probability sampling requires that the chance of each potential sample being included is known (Mazzocchi, 2008). Conversely, non-probability sampling expresses an inability for all persons to have equal chances of being included in the sample (Robson & McCartan, 2016). While probability sampling is recognised as superior in its ability to generalise results, an inherent lack of resources, such as cost and access restraints, made this sampling design infeasible in the current context (Amis, 2005; Kidder & Judd, 1986). Specifically, given the organisational scope and the exploratory nature of the research, the selection of non-probability sampling was determined as appropriate.

Within the suite of non-probability sampling methods, a purposive and convenience sampling method was devised. Purposive sampling promotes meaningful insight through

selection of relevant participants for data collection (Creswell, et al., 2003; Patton, 2002). Convenience sampling is characterised as a less costly and time-efficient method (Anderson & Gerbing, 1982), which relies upon the selection of sample participants by relative ease of access. The combination of these sampling techniques is justified within the current research where participants were required to be ‘continuous’ contract holders (purposive sampling), engaged at a fitness facility managed by the partner organisation of the research (convenience sampling).

Having outlined the selection of sampling techniques, a final prescription of the sample size must be asserted. In order to adequately estimate the sampling error, sample size must be considered (Bollen, 1989; Hair, et al., 2018). The sample size of the current research was largely dictated by the intended data analysis method, Structural Equation Modelling (SEM). A strength of SEM is its flexibility. This is evident through its capability to examine complex associations, use various types of data, and make comparisons across alternate models (Wolf, et al., 2013). However, this flexibility makes it difficult to develop generalised guidelines regarding sample size requirements (Wolf, et al., 2013). Despite this, various rules and guidelines exist within SEM practices, including a minimum sample size of 5 or 10 observations per estimated parameter (Bollen, 1989), 100 or 200 as a minimum (Boomsma, 1985), or 10 cases per variable (Nunnally, 1967). Considering these guidelines, the current research prescribed at least 250 usable cases in each stage of research, guaranteeing a suitable number of usable cases based on these established guidelines.

4.6 Research Design

This section details the overall strategy utilised throughout the three distinct stages of research. This strategy constitutes the foundation for data collection, measurement, and analysis. A descriptive research design was undertaken within current research, through

collection of survey data and behavioural data. Within the research design, survey data was specified as a deconstruction of questionnaire development and was determined as relevant through each distinct research stage. It should be noted that, while retention was utilised as the outcome variable for each distinct research stage, this was derived as a single item from the participant database, and will be discussed in detail in Section 4.6.4.

An association is presented between the terms ‘survey’ and ‘questionnaire’, despite the tendency for survey research to also account for personal interviews, direct observation, or self-administered questionnaires (Bryman, 2016). As a result of concept distinction, the term ‘questionnaire’ will be utilised in the current context. This assertion is made where current research proposes an online questionnaire as the primary data collection method.

Many advantages of online questionnaires have been established, including, collection of comprehensive data (Monroe & Adams, 2012), acquisition of large sample sizes over short periods (Denissen, et al., 2010), rapidness of responses (McDonald & Adam, 2003), cost-effectiveness (Denissen, et al., 2010; McDonald & Adam, 2003), and maintenance of anonymity (Denissen, et al., 2010). These strengths are supported as outweighing potential disadvantages, suggested as non-response bias (Harvey, et al., 2018; Jordan, et al., 2011), and high rates of non-delivery (Bryman, 2016).

In this research, responses were gathered from active full-service ‘continuous’ contract holders within a single facility managed by the partner organisation. The construction of the questionnaire instrument is discussed next, with a summary of the research design presented in Table 4.3.

Table 4.3 Summary of Research Design

Research Stage	Data Collection Method	Data Analysis Technique
Research Stage One	Online Questionnaire (Collection #1)	<ul style="list-style-type: none"> • Confirmatory Factor Analysis • Structural Equation Modelling
Research Stage Two	Online Questionnaire (Collection #2)	<ul style="list-style-type: none"> • Confirmatory Factor Analysis • Structural Equation Modelling
Research Stage Three	Online Questionnaire (Collection #2) and Participant Database	<ul style="list-style-type: none"> • Structural Equation Modelling

Note: The outcome measure, retention, was derived from the participant database at each distinct stage of research. This data collection will be discussed in detail in Section 4.6.4.

4.6.1 Instrument Development

Effective questionnaire development must consider the wording, categorisation, and appearance of content (Sekaran, 2003). In aggregate, the questionnaire instruments used within current research were developed from previous studies (e.g., Avourdiadou & Theodorakis, 2014; Hill & Green, 2012; Howat & Assaker, 2013; 2016; Kwan & Bryan, 2010; Parasuraman, et al., 1988; Zeithaml & Parasuraman, 1996), and were adapted to suit the context. Adoption of validated measurement scales saw consideration of wording and variable categorisation determined by past research. Furthermore, an attractive, simple appearance was used to maximise response rates (Dillman, 2014). Specifically, this included the use of neutral colours, a company logo, large text size, and easy-to-read font style.

Questionnaire development occurred through two data collection stages. The initial questionnaire development, attributed to Research Stage One, replicated the Howat and Assaker (2016) framework. Given use within a comparable context, wording and content was largely unchanged from that of Howat and Assaker (2016). Replication establishes the constructs process quality, outcome quality, value, satisfaction, and loyalty, as forming the foundation for data collection and measurement within Research Stage One.

A subsequent questionnaire was developed for a second data collection (to inform Research Stage Two and Research Stage Three). This development refined and enhanced measurement constructs, in line with a view of SCT influences embedded within Research Stage Two. This meant the additional collection and measurement of self-efficacy, behavioural influences, and a multi-dimensional conceptualisation of loyalty, within Research Stage Two and Research Stage Three.

For both questionnaire data collection phases, scale adoption decisions were based on obtaining measurements that had proven high construct reliability, as indicated by Cronbach's Alpha and Critical Ratio (CR) values (Hair, et al., 2014a). To reflect this, development of the questionnaire instrument and operationalisation of each construct, including measures, scales, and sources, was undertaken for each distinct stage of research. A summative representation of the references used to define measurement scales across research stages is presented in Table 4.4.

Table 4.4 Summative Questionnaire Construct References

Questionnaire Instrument	Reference
Participant Background	Items adapted from Industry Reports
Self-Reported Attendance Behaviour	Godin & Shephard, 1985; Mahony, et al., 2000
Self-Efficacy	Kwan & Bryan, 2010
Outcome Quality	Howat & Assaker, 2016
Process Quality	Howat & Assaker, 2016
Satisfaction	Howat & Assaker, 2016; Pedragosa, et al., 2015
Value	Howat & Assaker, 2016
Loyalty	Avourdiadou & Theodorakis, 2014; Howat & Assaker, 2016; Kwan & Bryan, 2010; Reichheld, 2003; Zeithaml & Parasuraman, 1996

Note: The outcome measure, retention, was derived from the participant database at each distinct stage of research. This data collection will be discussed in detail in Section 4.6.4.

4.6.2 Research Design: Research Stage One

Research Stage One empirically tests the applicability of the Howat and Assaker (2016) model to explain member retention. This replication evaluates member service quality perceptions, attitudes, and conceptual relationships. To enhance practical relevance connecting to existing research, Research Stage One explores RQ1: *How effective are current conceptualisations of service quality for predicting member loyalty in a fitness facility context?*

As a result of replication, conceptualisation is informed through formative and reflective measurement model constructs. The inherent nature of concepts, and the influence of past research, sees both measurement models appropriate for assessment. Formative measurement models assume changes in a single indicator cause *variation*, rather than *changes* in the latent construct. A reflective approach views *change* in indicators reflecting the *change* in the latent construct. Within current research, support for both formative and reflective measurement models can be evidenced through previous use of process quality and outcome quality as higher-order formative constructs with both primary dimensions, and sub-dimensions (Brady & Cronin, 2001; Howat & Assaker, 2016). This approach determines the

relationships from latent constructs to primary dimensions, as *formative* models, and those between primary dimensions and subdimensions as *reflective* models. In sum, replication of Howat and Assaker (2016) measurement model constructs in Research Stage One informs questionnaire items and their conceptualisation.

Following identification of the measurement models, measurement scales used in questionnaire development must be outlined. Therefore, items investigated within the first data collection, attributed to Research Stage One, are detailed next. Further, a complete review of the Research Stage One questionnaire instrument is presented in Table 4.5.

Participant Background: Participants were required to answer a set of items that described demographic factors such as age, gender, geographic location of residence, household composition, life stage, income, education, and employment.

Outcome Quality: Outcome quality items were largely replicated from Howat and Assaker (2016). A seven-point Likert scale was used to measure member perceptions and attitudes regarding outcome quality. Perceptions and attitudes were sought regarding the extent membership improved health, psychological wellbeing, and fitness level. This scale ranged from (1) “Strongly Disagree” to (7) “Strongly Agree”. Investigated outcomes of fitness facility engagement have been supported in the literature (Howat & Assaker, 2016; Brady & Cronin, 2001).

Process Quality: Using a seven-point Likert scale, process quality items were replicated from Howat and Assaker (2016). The 14 process items were measured using scale metrics from (1) “Strongly Disagree” to (7) “Strongly Agree”. Members were required to rank their opinion on service environment and delivery measures investigated for four process quality dimensions: facility presentation, core services, staff, and parking (Howat & Assaker, 2016).

Satisfaction: As replicated from Howat and Assaker (2016), two items measured overall satisfaction. Perception of satisfaction was measured through an eleven-point scale, ranging from (0) “Strongly Disagree” to (10) “Strongly Agree”. The use of an eleven-point scale was adjusted from Howat and Assaker (2016), which saw the use of a seven-point scale. This alteration was intended to align with related work of McDonald et al. (2013) in the areas of satisfaction. Here, longer scales are recommended for satisfaction and related concepts, given many people have similar experiences and familiarity with longer scales (McDonald, et al., 2013). These scale items included: “Overall, how satisfied are you with your Fitness Facility experience as a user of the centre?”; and “Overall, how satisfied are you with your experience as a member at your Fitness Facility?”.

Value: Value was measured using two items of perceived value replicated from Howat and Assaker (2016). These value items included the perceived value for money of the facilities and the programs provided by the participant’s respective fitness facility. Member perception of value was indicated through an eleven-point scale. This scale ranged from (0) “Strongly Disagree” to (10) “Strongly Agree”. Measurement of value using an eleven-point scale was again aligned with McDonald et al. (2013).

Loyalty: Three loyalty items were replicated from Howat and Assaker (2016). These are self-reported measures of loyalty, and largely represent attitudinal loyalty intentions. Items included likelihood to make positive comments about the centre and its services to other people, encourage others to attend the centre, and recommend your fitness centre to a friend or colleague. Loyalty items were measured using an eleven-point scale ranging from (0) “Not at All” to (10) “Definitely”. Loyalty items detail future membership intention and are thus captured using purchase probability scales (Juster, 1969).

The final scale included 41 items, explaining pre-examined dimensions of service quality in a fitness facility context: facility presentation, core services, staff, parking, competition success, social, health and fitness, and relaxation and stress release. Additionally, Research Stage One sought to investigate demographics, satisfaction, value, and loyalty. These were drawn from Howat and Assaker (2016) and replicated in the current context to both reaffirm relevance and to evaluate the role of constructs in explaining member retention. For items measuring value, satisfaction, and loyalty, the use of longer scale was dissimilar to Howat and Assaker (2016). Amendment of these scales was justified through the work of McDonald et al. (2013).

Table 4.5 Research Stage One Questionnaire Instrument

Dimension	Attributes/Items	Label	Scale
Participant Background <i>(Replicated From: Industry Reports)</i>	Postcode	PB1	Categorical
	Age/Gender	PB2	Categorical
	Member Type	PB3	Categorical
	Services Used	PB4	Categorical
	Length of Membership	PB5	Ordinal
Outcome Quality <i>(Replicated From: Howat & Assaker, 2016)</i>	Improved performance in competitive sport.	OQ1	1 = Strongly Disagree to 7 = Strongly Agree
	Pushing myself in competition.	OQ2	1 = Strongly Disagree to 7 = Strongly Agree
	Success in competition.	OQ3	1 = Strongly Disagree to 7 = Strongly Agree
	Spending time with family and/or friends.	OQ4	1 = Strongly Disagree to 7 = Strongly Agree
	Enjoying time with family and/or friends.	OQ5	1 = Strongly Disagree to 7 = Strongly Agree
	Improved physical fitness.	OQ6	1 = Strongly Disagree to 7 = Strongly Agree
	Improved health.	OQ7	1 = Strongly Disagree to 7 = Strongly Agree
	Improved psychological wellbeing.	OQ8	1 = Strongly Disagree to 7 = Strongly Agree
	Escaping the pressures of daily life.	OQ9	1 = Strongly Disagree to 7 = Strongly Agree
	Reducing stress levels.	OQ10	1 = Strongly Disagree to 7 = Strongly Agree
	Relaxation.	OQ11	1 = Strongly Disagree to 7 = Strongly Agree
Process Quality <i>(Replicated From: Howat & Assaker, 2016)</i>	The centre is always clean.	PQ1	1 = Strongly Disagree to 7 = Strongly Agree
	The centre is well maintained.	PQ2	1 = Strongly Disagree to 7 = Strongly Agree
	Equipment is of high quality and well maintained.	PQ3	1 = Strongly Disagree to 7 = Strongly Agree
	Up-to-date information is available (e.g. activities, results).	PQ4	1 = Strongly Disagree to 7 = Strongly Agree
	The centre is well organised and well run.	PQ5	1 = Strongly Disagree to 7 = Strongly Agree
	A suitable range of activities is available.	PQ6	1 = Strongly Disagree to 7 = Strongly Agree
	The centre's programs start and finish on time.	PQ7	1 = Strongly Disagree to 7 = Strongly Agree
	Activities are relevant to the needs of the customers.	PQ8	1 = Strongly Disagree to 7 = Strongly Agree
	The centre's parking is very safe and secure.	PQ9	1 = Strongly Disagree to 7 = Strongly Agree
	The centre's parking is suitable.	PQ10	1 = Strongly Disagree to 7 = Strongly Agree
	Staff are friendly.	PQ11	1 = Strongly Disagree to 7 = Strongly Agree
	Staff are responsive.	PQ12	1 = Strongly Disagree to 7 = Strongly Agree

Dimension	Attributes/Items	Label	Scale
	Staff are presentable and easily identified.	PQ13	1 = Strongly Disagree to 7 = Strongly Agree
	Staff are experienced and knowledgeable.	PQ14	1 = Strongly Disagree to 7 = Strongly Agree
Value <i>(Replicated From: Howat & Assaker, 2016)</i>	My Fitness Centre's facilities provide value for money	VALUE1	0 = Strongly Disagree to 10 = Strongly Agree
	My Fitness Centre's programs provide value for money	VALUE2	0 = Strongly Disagree to 10 = Strongly Agree
Satisfaction <i>(Replicated From: Howat & Assaker, 2016)</i>	Overall, how satisfied are you with your Fitness Facility experience as a user of the centre?	SAT1	0 = Very Dissatisfied to 10 = Very Satisfied
	Overall, how satisfied are you with your experience as a member at your Fitness Facility?	SAT2	0 = Very Dissatisfied to 10 = Very Satisfied
Loyalty <i>(Replicated From: Howat & Assaker, 2016)</i>	How likely are you to make positive comments about the centre and its services to other people?	BI1	0 = No Chance to 10 = Certain
	How likely would you be to encourage others to attend the centre?	BI2	0 = No Chance to 10 = Certain
	How likely is it that you would recommend your Fitness Centre to a friend or colleague?	BI3	0 = No Chance to 10 = Certain
Final Classification <i>(Adopted From: Industry Reports)</i>	Life stage	PB8	Categorical
	Income	PB9	Categorical
	Education	PB10	Categorical
	Employment	PB11	Categorical

Note: The outcome measure, retention, was derived from the participant database at each distinct stage of research. This data collection will be discussed in detail in Section 4.6.4.

4.6.3 Research Design: Research Stage Two

Following replication of Howat and Assaker’s (2016) framework in Research Stage One, Research Stage Two sought to integrate an SCT view of behaviour and to test the ability of constructs to explain member retention. Specifically, this stage of research saw the addition of self-efficacy, self-reported attendance behaviour, and a multi-dimensional conceptualisation of loyalty to enhance explanation of member retention in a fitness facility context. These additions permitted reconsideration and expansion of predetermined measurement scales. Such prescription assesses Research Question 2: *How do self-efficacy, self-reported attendance behaviour, and multi-dimensional loyalty enhance the explanation of member retention in a fitness facility context?*

Based on the evaluation of Research Stage One and the intentions of Research Stage Two, several changes were made to the questionnaire instrument. These changes reflect a second data collection. Refinements and enhancements are discussed next and summarised below in Table 4.6. Further, a complete review of the Research Stage Two questionnaire instrument is presented in Table 4.7.

Table 4.6 Research Stage Two Questionnaire Scale Amendments

Questionnaire Scale	Data Collection One	Data Collection Two
Participant Background	Y	<i>Refined</i>
Self-Reported Attendance Behaviour	-	<i>Addition</i>
Self-Efficacy	-	<i>Addition</i>
Outcome Quality	Y	<i>Replicated</i>
Process Quality	Y	<i>Replicated</i>
Satisfaction	Y	<i>Refined and Enhanced</i>
Value	Y	<i>Replicated</i>
Loyalty	Y	<i>Refined and Enhanced</i>

Note: The outcome measure, retention, was derived from the participant database at each distinct stage of research. This data collection will be discussed in detail in Section 4.6.4.

Participant Background: Refined participant background questioning was prescribed for the questionnaire instrument attributed to Research Stage Two. Participants were required to answer a set of items that described demographic factors such as age, gender, geographic location of residence, and distance travelled to attend.

Self-Reported Attendance Behaviour: Assessment of self-reported attendance behaviour was an addition to the revised questionnaire instrument, attributed to Research Stage Two. Adapted from Mahony, et al. (2000), participant gym member behaviour was assessed through: area of use, length of time as member, and self-reported attendance per week. In addition, the Leisure Time Exercise Questionnaire (LTEQ) was used to indicate physical activity (Godin & Shephard, 1985). The LTEQ assesses usage through three items targeting voluntary aerobic exercise. The reliability and validity of this instrument has been supported (Godin & Shephard, 1985; Jacobs, et al., 1993). Using a five-point scale, participants report how often they engaged in the specific type of exercise in the past three months.

Self-Efficacy: Assessment of self-efficacy was an addition to the revised questionnaire instrument, attributed to Research Stage Two. The addition of this construct was intended to satisfy the integration of SCT influences. This integration portrays self-efficacy as an individual influence of behaviour facilitation and maintenance. Participants' exercise capability was indicated through a seven-point Likert scale. Three items adopted from Kwan and Bryan (2010) assessed member-perceived capability to perform aerobic exercise. This scale ranged from (1) "Strongly Disagree" to (7) "Strongly Agree".

Outcome Quality: Assessment of outcome quality was replicated in the revised questionnaire instrument, attributed to Research Stage Two. In total, 12 outcome items were

measured on a seven-point Likert scale ranging from (1) “Strongly Disagree” to (7) “Strongly Agree”.

Process Quality: Assessment of process quality was replicated in the revised questionnaire instrument, attributed to Research Stage Two. In total, 14 process items were rated on a seven-point Likert interval scale ranging from (1) “Strongly Disagree” to (7) “Strongly Agree”.

Value: Assessment of value was replicated in the revised questionnaire instrument, attributed to Research Stage Two. Value was, therefore, measured using two items of perceived value adapted from Howat and Assaker (2016). Member perception of value was indicated through an eleven-point scale. This scale ranged from (0) “Strongly Disagree” to (10) “Strongly Agree”.

Satisfaction: Assessment of satisfaction was refined and enhanced in the revised questionnaire instrument, attributed to Research Stage Two. Non-significant relationships within Research Stage One, as well as a need to increase construct indicators, advocated an amended satisfaction construct. As a result, a wider capture of member satisfaction was measured using four items adopted from Pedragosa, et al. (2015). This satisfaction perception was measured through the use of a seven-point scale, ranging from (1) “Strongly Disagree” to (7) “Strongly Agree”. Movement to a multi-item scale improved the points of discrimination in the revised instrument. The adopted scale was constructed for use in a fitness facility context and was therefore applicable to the current research.

Loyalty: Assessment of loyalty was refined and enhanced in the revised questionnaire instrument, attributed to Research Stage Two. Research Stage Two aimed to address the inadequacy of a one-dimensional view of loyalty (Dick & Basu, 1994; Oliver, 1997). To examine a multi-dimensional conceptualisation of loyalty, item development was guided by

past work which assessed attitudinal (Howat & Assaker, 2013; 2016) *or* behavioural (Behnam, et al., 2021; Brady & Robertson, 2001; Caruana, 2002; Clemes, et al., 2011; Zeithaml, et al., 2009) intention as single measures of loyalty. Therefore, compared to Research Stage One, the measurement scale was enhanced to reflect both attitudinal loyalty, represented by word of mouth and recommendation intention indicators, and behavioural loyalty, represented by intention to repurchase indicators. Loyalty items depicting recommendation and repurchase intention were adopted from Zeithaml and Parasuraman (1996) and Avourdiadou and Theodorakis (2014). Additionally, Net Promoter Score (NPS) was utilised as a measure of member willingness to recommend to friends or colleagues (Reichheld, 2003). Replicated from the initial questionnaire instrument, loyalty items were measured using an eleven-point purchase probability scale (Juster, 1969), justified through the work of McDonald et al. (2013).

In sum, the final scale included 49 items, which explained pre-examined dimensions of service quality: facility presentation, core services, staff, parking, interpersonal interaction, competition success, social, health and fitness, mental health, and relaxation and stress release. Additionally, Research Stage Two sought to investigate demographics, self-reported attendance behaviour, self-efficacy, satisfaction, value, and loyalty. The refined questionnaire permitted integration of individual, environmental, and behavioural influences of SCT, and distinction of a multi-dimensional loyalty construct, in line with the contributions of Research Stage Two.

Table 4.7 Research Stage Two Questionnaire Instrument

Dimension	Attributes/Items	Label	Scale
Participant Background & Self-Reported Attendance Behaviour <i>(Adopted From: Industry Reports; Godin & Shephard, 1985; Mahony, et al., 2000)</i>	Postcode	PB1	Categorical
	Age/Gender	PB2	Categorical
	Member Type	PB3	Categorical
	Services Used	PB4	Categorical
	Distance travelled to Attend	PB5	Categorical
	Length of Membership	PB6	Ordinal
	Utilisation (Frequency)	PB7	Ordinal
	Exercise Type and Intensity	PB8	1 = Never to 5 = Often
Self-Efficacy <i>(Adopted From: Kwan & Bryan, 2010)</i>	I feel confident that I could do 20 minutes of aerobic exercise three times a week.	SE1	1 = Very Unimportant to 7 = Very Important
	I feel confident that I know how to do aerobic exercise correctly.	SE2	1 = Very Unimportant to 7 = Very Important
	I feel confident that I could do many different kinds of aerobic exercise.	SE3	1 = Very Unimportant to 7 = Very Important
Outcome Quality <i>(Adopted From: Howat & Assaker, 2016)</i>	Improved performance in competitive sport.	OQ1	1 = Strongly Disagree to 7 = Strongly Agree
	Pushing myself in competition.	OQ2	1 = Strongly Disagree to 7 = Strongly Agree
	Success in competition.	OQ3	1 = Strongly Disagree to 7 = Strongly Agree
	Spending time with family and/or friends.	OQ4	1 = Strongly Disagree to 7 = Strongly Agree
	Enjoying time with family and/or friends.	OQ5	1 = Strongly Disagree to 7 = Strongly Agree
	Improved physical fitness.	OQ6	1 = Strongly Disagree to 7 = Strongly Agree
	Improved health.	OQ7	1 = Strongly Disagree to 7 = Strongly Agree
	Improved psychological wellbeing.	OQ8	1 = Strongly Disagree to 7 = Strongly Agree
	Escaping the pressures of daily life.	OQ9	1 = Strongly Disagree to 7 = Strongly Agree
	Reducing stress levels.	OQ10	1 = Strongly Disagree to 7 = Strongly Agree
	Relaxation.	OQ11	1 = Strongly Disagree to 7 = Strongly Agree
Process Quality	The centre is always clean.	PQ1	1 = Strongly Disagree to 7 = Strongly Agree

Dimension	Attributes/Items	Label	Scale
<i>(Adopted From: Howat & Assaker, 2016)</i>	The centre is well maintained.	PQ2	1 = Strongly Disagree to 7 = Strongly Agree
	Equipment is of high quality and well maintained.	PQ3	1 = Strongly Disagree to 7 = Strongly Agree
	Up-to-date information is available (e.g., activities, results).	PQ4	1 = Strongly Disagree to 7 = Strongly Agree
	The centre is well organised and well run.	PQ5	1 = Strongly Disagree to 7 = Strongly Agree
	A suitable range of activities is available.	PQ6	1 = Strongly Disagree to 7 = Strongly Agree
	The centre's programs start and finish on time.	PQ7	1 = Strongly Disagree to 7 = Strongly Agree
	Activities are relevant to the needs of the customers.	PQ8	1 = Strongly Disagree to 7 = Strongly Agree
	The centre's parking is very safe and secure.	PQ9	1 = Strongly Disagree to 7 = Strongly Agree
	The centre's parking is suitable.	PQ10	1 = Strongly Disagree to 7 = Strongly Agree
	Staff are friendly.	PQ11	1 = Strongly Disagree to 7 = Strongly Agree
	Staff are responsive.	PQ12	1 = Strongly Disagree to 7 = Strongly Agree
	Staff are presentable and easily identified.	PQ13	1 = Strongly Disagree to 7 = Strongly Agree
	Staff are experienced and knowledgeable.	PQ14	1 = Strongly Disagree to 7 = Strongly Agree
	Value <i>(Adopted From: Howat & Assaker, 2016)</i>	My Fitness Centre's facilities provide value for money	VALUE1
My Fitness Centre's programs provide value for money		VALUE2	0 = Strongly Disagree to 10 = Strongly Agree
Satisfaction <i>(Adopted From: Pedragosa Et Al., 2015)</i>	I am fully satisfied with my fitness facility.	SAT1	1 = Strongly Disagree to 7 = Strongly Agree
	My fitness facility always fulfils my expectations	SAT2	1 = Strongly Disagree to 7 = Strongly Agree
	My experiences with my fitness facility are excellent	SAT3	1 = Strongly Disagree to 7 = Strongly Agree
	My fitness facility has never disappointed me so far	SAT4	1 = Strongly Disagree to 7 = Strongly Agree
Loyalty <i>(Adopted From: Avourdiadou & Theodorakis, 2014; Howat & Assaker, 2016; Kwan & Bryan,</i>	How likely are you to make positive comments about fitness facility and its services to other people?	BI1	0 = No Chance to 10 = Certain
	How likely is it that you will talk to your friends or family about exercise in the next three months?	BI2	0 = No Chance to 10 = Certain
	How likely are you to visit your fitness facility over the next week?	BI3	0 = No Chance to 10 = Certain

Dimension	Attributes/Items	Label	Scale
<i>2010; Reichheld, 2003; Zeithaml & Parasuraman, 1996;)</i>	How likely are you to visit your fitness facility over the next month?	BI4	0 = No Chance to 10 = Certain
	How likely are you to continue to be a member for the next 3 months?	BI5	0 = No Chance to 10 = Certain
	How likely are you to continue to be a member for the next 12 months?	BI6	0 = No Chance to 10 = Certain
	On a scale of 0 to 10, how likely is it that you would recommend your fitness facility to a friend or colleague?	BI7	0 = No Chance to 10 = Certain

Note: The outcome measure, retention, was derived from the participant database at each distinct stage of research. This data collection will be discussed in detail in Section 4.6.4.

4.6.4 Research Design: Research Stage Three

Finally, following replication of Howat and Assaker's (2016) framework in Research Stage One, and refinement and enhancement in Research Stage Two, Research Stage Three advances incorporated a focus on the measurement and use of self-reported attitudes and intentions. This stage of research sought to assess the role of observed attendance behaviour in explaining retention as a defined outcome of loyalty. In this way, Research Stage Three uniquely assesses the role of attitudinal data and behavioural data. Assessment through a combination of data sources attempts to improve understanding of member retention and its determinants. Research Stage Three is therefore epitomised by Research Question 3: *How does observed attendance behaviour enhance the explanation of member retention in a fitness facility context?*

Research Stage Three utilised both the attitudinal data collected through questionnaires in Research Stage Two, as well as observed attendance behavioural data obtained from the fitness facility. Attitudinal and behavioural data sources are discussed next and are summarised in Table 4.8.

Table 4.8 Research Stage Three Data Collection

Attitudinal Data	Data Collection One	Data Collection Two	Data Collection Three
Participant Background	Y	<i>Refined</i>	Y
Self-Reported Attendance Behaviour	-	<i>Addition</i>	Y
Self-Efficacy	-	<i>Addition</i>	Y
Outcome Quality	Y	<i>Replicated</i>	Y
Process Quality	Y	<i>Replicated</i>	Y
Satisfaction	Y	<i>Refined and Enhanced</i>	Y
Value	Y	<i>Replicated</i>	Y
Loyalty	Y	<i>Refined and Enhanced</i>	Y
Behavioural Data	Data Collection One	Data Collection Two	Data Collection Three
Attendance Frequency	-	-	Y
Attendance Consistency	-	-	Y
Member Retention (Binary)	Y	Y	Y

4.6.4.1 Attitudinal Data

In Research Stage Three, all attitudinal data collected as part of the second online questionnaire (analysed in Research Stage Two) was retained. This process was outlined in Section 4.6.3. and included constructs inclusive of process quality, outcome quality, value, satisfaction, self-efficacy, attitudinal loyalty, and behavioural loyalty. The Research Stage Three model therefore is largely a replication of Research Stage Two when considering the attitudinal components. However, Research Stage Three includes the addition of observed attendance behaviour via data sources from the organisation’s attendance records (as opposed to self-reported attendance behaviour utilised within Research Stage Two).

4.6.4.2 Behavioural Data

Research Stage Three aimed to improve understanding of member retention determinants through the use of observed attendance behaviour, which was obtained from the fitness facility and aligned with records of those who responded to surveys. Behavioural data had

potential to be valuable, given that, for example, attendance frequency has been shown to be significant for member retention (Duncan, et al., 2005; McDonald, 2010; San Emeterio, et al., 2016; Yi, et al., 2020). The unique addition of behavioural variables was enabled through an export of attendance and member retention information from the partner organisation's data management system. This data management system integrated information from entrance turnstiles to provide observed average monthly attendance and attendance consistency over a 56-week period. The system also allowed a measure of member retention to be accessed (i.e., which members had been retained, and which members had cancelled or expired contracts).

At the partner organisation, an enterprise billing and Customer Relationship Management (CRM) system allowed for both standardised and customised reporting of key performance indicators. Specifically, this system manages the software, marketing, and payments systems, and tracks attendance, membership renewal, and additional purchases on a daily basis. These reports have the capacity to be exported for further analysis.

The system affords the ability to extract certain fields by running a query via the system. Deidentified behavioural data was collected using each member's unique member identification number as the primary key (PK). The primary key uniquely identifies each row or record in any given database table. A table may only have one primary key. However, a primary key may contain multiple fields. The primary key can also be used to join database tables, for example, merging contract cancellations with attendance records. Relevantly, the data management system enabled the partner organisation to export deidentified databases: weekly member attendance, contract cancellations, contract expiry records, and current contracts.

Data was extracted on a weekly basis and then aggregated to obtain a holistic view of each member's monthly attendance over the duration of the measurement window

(02/01/2019–27/01/2020). These exported databases provided access to observed attendance behaviour for the current research in three areas:

- ***Attendance Frequency:*** Attendance frequency, or the number of times a member attended, has been proposed within research as positively associated to retention (Duncan, et al., 2005; McDonald, 2010; San Emeterio, et al., 2016; Yi, et al., 2020). Complementing existing research, Research Stage Three sought to assess the role of attendance frequency in explaining loyalty indicators and retention. Within the current research, attendance frequency was tracked through the partner organisation's data management system. As a result of typically high variability in weekly attendance frequency, monthly attendance frequency was sought as a core observed behaviour for assessment. The decision to assess monthly attendance frequency is in line with Yi et al. (2020).
- ***Attendance Consistency:*** To advance the use of observed attendance measures in a fitness facility context, attendance consistency was extracted from the partner organisation's data management system. Attendance consistency is defined as the percentage of the weeks attended as a share of total weeks over the active measurement period (e.g. if a member attended in 20 weeks of the 50-week period, consistency would be 40%). To our knowledge, the usefulness of attendance consistency has been neglected within previous analysis. This approach was posited to demonstrate ways to derive additional insight from raw attendance data, beyond the first order implications, relevant to both researchers and practitioners in the field of sport and leisure management.
- ***Member Retention:*** For each distinct stage of research, member retention is evaluated as the final outcome variable. Despite its central role in each research stage, member retention was collected and measured alongside observed attendance behaviour. This

collection method was necessary due to the use of the partner organisation's data management system for data extraction, as well as the need to access member retention subsequent to participant submission of the associated questionnaire.

Member retention was derived by merging and analysing a range of data extracts: contract cancellations, contract expiries, and current contracts. Cross-referencing occurred between these extracts to indicate whether a participant had remained a member over the period. Data extracts permitted assessment of member retention as a binary outcome (e.g. 1=retained, or 0=cancelled). Due to feasibility of data collection, as well as time restraints associated with doctoral research, the measure of member retention was calculated 25 weeks following the questionnaire close date. Specifically, member retention was calculated 25 weeks after the conclusion of the first questionnaire attributed to Research Stage One (May 2019), and 25 weeks after the conclusion of the second questionnaire attributed to Research Stage Two and Research Stage Three (January 2020).

4.7 Data Collection Process

Data collection is the process of gathering and measuring insights for research (Adams, et al., 2014). Effective data collection procedures ensure data is available for analysis, enabling the achievement of research aims. Current research collected and utilised a combination of attitudinal data and behavioural data.

Attitudinal data was collected through two distinct questionnaires instruments, outlined in Section 4.6.2 and Section 4.6.3. Use of a questionnaire instrument for data collection permits a number of benefits, such as time savings, higher control, and lower associated costs (Gates & Solomon, 1982). For both questionnaire instruments, the online form builder 'Formstack' was used for development and distribution. Despite the existence of

many survey distribution platforms, pre-existing use of Formstack by the partner organisation enabled ease of distribution of the tool, as well as respondent deidentification and ease of data management and transition following the process.

Since the partner organisation currently distributes all member communications through a web-based electronic mailing system, this method of communication was deemed most appropriate for initial contact with potential participants. As a result, a link to the online 'Formstack' questionnaire was disseminated via email, to all current active 'continuous' contract holders. Initial contact additionally enabled the communication of information regarding the purpose and details of the voluntary nature of participation, assured respondent confidentiality, provided response directions, and conveyed appreciation for the subject's participation.

For questionnaire submissions, responses were associated with a unique member number. The use of unique member numbers anonymised questionnaire respondents to researchers, and enabled responses to be anonymously joined to the behavioural data set. This joining provided a novel approach, allowing concurrent analysis of attitudinal data and behavioural data. Such analysis advances the dominant focus of sport and leisure research on the measurement and use of attitudes, and intentions, as outcomes, and allows for retention behaviour to be the focus, which is positioned as a loyalty outcome.

Behavioural data was collected through the data export from the partner organisation's data management system, as outlined in Section 4.6.4. This data collection process enabled access to weekly member attendance, contract cancellations, contract expiries, and current contracts. As discussed previously, data was extracted on a weekly basis, and then aggregated to obtain a holistic view of each member's attendance over the duration of the measurement window (02/01/2019–27/01/2020). This process of data

collection was also attributed to the measurement of member retention, as a binary loyalty outcome.

In line with the ethics approval granted for this research, members had the ability to cease involvement at any stage. Involvement could be terminated by exiting the browser prior to questionnaire completion. In addition, the partner organisation had the capacity to withdraw respondent data should they decide to cease their participation after submission.

4.8 Data Analysis Methods

A number of analysis methods were employed throughout the research stages. *Firstly*, data cleaning was pursued to improve the quality of data intended for further analysis. For attitudinal data, data cleaning involved the exclusion of missing data and duplicate responses, as well as assessing data normality. *Secondly*, attitudinal data obtained throughout data collection was analysed at an exploratory level using SPSS v26.0. This analysis provided descriptive statistics and determined the skewness and kurtosis of scale items. *Thirdly*, development of measurement models assessed were undertaken via a Confirmatory Factor Analysis (CFA) using SPSS v26.0 and AMOS v26.0. This enabled the measurement of constructs and items to be validated in line with the conceptual frameworks and for measurement to be assessed via goodness of fit indices. *Finally*, conceptual frameworks and hypothesis were tested using Structural Equation Modelling (SEM) using SmartPLS. This method specified the extent to which the sample data supported theoretically hypothesised relationships (Schumacker & Lomax, 2010). Each data analysis method employed throughout the research is discussed next.

It should be noted that varied data analysis methods were applied at distinct stages of the research. As a result, analysis methods will be discussed in aggregate, but were applied as

relevant to research stages. These distinctions are presented in Table 4.9. In short, given the same dataset was used for attitudinal measurement in Research Stage Two and Research Stage Three, some data analysis methods were not replicated.

Table 4.9 Summary of Data Analysis Method Application

Data Analysis Method	Research Stage One	Research Stage Two	Research Stage Three
Data Cleaning	Y	Y	Y
Missing Data	Y	Y	
Duplicate Responses	Y	Y	
Data Normality	Y	Y	Y
Validity and Reliability	Y	Y	
Confirmatory Factor Analysis	Y	Y	
Model Fit Measures	Y	Y	
Structural Equation Modelling (PLS-SEM)	Y	Y	Y
Common Method Bias	Y	Y	Y

4.8.1 Data Cleaning, Testing and Preparation

Following data collection via Formstack, data was exported to a datafile for access via the Statistical Package for Social Science (SPSS) platform. To assist with initial data cleaning, two primary advantages of the Formstack program platform were leveraged. *Firstly*, questions were programmed as ‘forced response’, ensuring participants gave a response before progressing through the questionnaire. *Secondly*, completion time was monitored. Pre-testing indicated a response time of approximately 8–15 minutes, therefore, any submission completed in less than eight minutes was subsequently removed from analysis. Maintaining timely completion ensured greater robustness in the results. *Additionally*, acquiescence response bias (Podsakoff, et al., 2003), where respondents answer questions without any significant variation (e.g. continually selecting ‘strongly disagree’ for every response), was also factored in the data cleaning process.

The large number of scale items and respondents involved in the online questionnaire prompted extensive data cleaning. This data cleaning occurred for each distinct research

stage. The complete data cleaning results are presented in Section 5.2 for Research Stage One, Section 6.2 for Research Stage Two, Section 7.2 for Research Stage Three. To facilitate the data cleaning process, incomplete responses were removed, followed by an examination of missing data, duplicate responses, and tests for data normality. These processes are discussed in detail next.

4.8.1.1 Missing Data

Missing data within statistical investigations has been shown to negatively impact the reliability and validity of modelling (Hair & Anderson, 2009). Hair and Anderson (2009) assert a general rule that any responses with more than 5% of items missing are problematic, along with non-random missing data or responses that display a pattern to the items missing (Hair & Anderson, 2009). The use of an online questionnaire allowed minimisation of the instances of missing data, but did not remove them entirely. For instance, a small amount of missing data reflected the absence of a unique member number. This unique member number permitted joining of data across attitudinal and behavioural data collection stages and was a requirement for complete questionnaire submission. Therefore, where participants did not produce a unique member number, the subsequent questionnaire response was eliminated as incomplete. Unique member numbers aside, the forced response mechanism of Formstack meant that missing data within questionnaire responses was not an issue in this research.

4.8.1.2 Duplicate Responses

Following identification of incomplete data submissions, duplicate responses were assessed and removed from the data set. In order to remove duplicate responses, researchers cross-checked for multiple instances of unique member ID or IP addresses. This process highlighted only a small number of responses that were eliminated as duplicate responses.

4.8.1.3 Normality of Data

The majority of statistical analysis is reliant on adherence to particular assumptions (Meyers, et al., 2006). In the case that these assumptions are not met, data or results may be considered untrustworthy, biased, or corrupt (Tabachnick & Fidell, 2013). A major assumption of multivariate data analysis is the normality of data. Data normality issues arise through large variation from normal distribution (Hair, et al., 2006).

Data normality was assessed through skewness and kurtosis. Asymmetry of a given distribution is measured by skewness (Hopkins & Weeks, 1990), while ‘peakedness’ or ‘flatness’ is measured by kurtosis (Hair, et al., 2006). Such distribution concerns are influenced by sample size, where the effect of non-normality is reduced for sample sizes greater than 200 (Hair, et al., 2006). This is relevant in the current research where larger sample sizes are evident.

Skewness and kurtosis testing were pursued through two methods. *Firstly*, tests occurred using SPSS normal probability plots and histograms (Hair, et al., 2006), and *secondly*, through evaluation of derived values. While acceptable values of skewness and kurtosis are expressed as -2 to +2 (Field, 2009; Gravetter & Wallnau, 2014), satisfaction research has commonly demonstrated elevation (Allen & Rao, 2000; Peterson & Wilson, 1992). As a result of this tendency, as well as evidently large sample sizes, the value range of ± 3 for skewness, and ± 5 for kurtosis was not considered problematic (Kendall & Stuart, 1958). Values falling outside the range of ± 3 for skewness, and ± 5 for kurtosis, were considered as indicating substantially skewed distribution (Kendall & Stuart, 1958) and ‘peaked’ or ‘flat’ kurtosis distribution (Hair, et al., 2010).

4.8.2 Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) intends to test and prove hypothesised relationships, or to confirm theoretical frameworks (Byrne, 2001; Hair & Anderson, 2009). To conduct a CFA, the ML method was adopted. This method is widely used to postulate the relationships between observed measures and underlying factors (Tabachnick & Fidell, 2013). CFA results determine construct reliability and validity (Hair et al. 2006; Schumacker & Lomax, 2012). These are discussed next.

Reliability is assessed through determination of systematic variation within a measurement instrument and evaluates the stability and consistency of constructs (Cavava, et al., 2001). Churchill (1979) affirmed that only reliable constructs are able to produce results that are consistent and without error. This process enables poor-performing scale items to be removed, limiting potential influence on structural relationships. To measure reliability, internal consistency measures are proposed.

Cronbach's Alpha is the most commonly used and well-documented method to test internal consistency. This method identifies item correlation, and tests variable measurement of intended constructs (Churchill, 1979). Items that are highly correlated are considered reliable and, therefore, denote the measurement of a common latent construct (Hair, et al., 1998). Hair and Anderson (2009) suggest a value >0.70 supports internal consistency and appropriateness for study. Furthermore, construct reliability, much like Cronbach's alpha, measures internal consistency (Netemeyer, et al., 2003). Construct reliability suggests a greater acceptance value >0.50 to support consistency.

Construct validity is measured through convergent and discriminant validity. Convergent validity describes the extent that measurement constructs are correlated (Churchill, 1979). This is examined through Critical Ratio (CR) values. CR values are

obtained by dividing the covariance estimate by its standard error. To be statistically significant, a conservative factor score of ≥ 0.70 is required (Hair, et al., 1998). To further assess validity, discriminant validity measures the distinctiveness of conceptually similar concepts (Hair, et al., 1998). This assessment proposes correlations between factors or dimensions should not exceed 0.85 (Kline, 1998). Additionally, single constructs should correlate higher among themselves, than between other constructs items (Campbell & Fiske, 1959). The current research evaluates discriminant validity through the covariance and correlation matrix derived from AMOS (v26.0). Discriminate validity is supported where the construct AVE is greater than the highest squared correlation with any other construct (Hair, et al., 2014a).

4.8.2.1 Model Fit Measures

Measurement model relationship testing determines the degree to which indicators capture a specified construct (Bollen, 1989). Therefore, model fit indices determine the extent that hypothesised relationships are present in observed data (Kline, 1998; Maruyama, 1998). If the resulting model fit indices are considered acceptable, the hypothesised measurement model has been supported by the sample data (Schumacker & Lomax, 2010). There are various categories of model fit indices including absolute, relative, parsimony, and non-centrality (Maruyama, 1998).

Absolute fit indices indicate the acceptable fit of data to the whole model, and exclude comparisons between an alternative and original model (Reisinger & Mavondo, 2007). In contrast, relative fit indices provide an incremental fit of the model. Non-centrality fit indices test the extent of rejection of an incorrect model (Reisinger & Mavondo, 2007).

Confirmatory Factor Analysis (CFA) resulted in the production of various fit indices, depicting the relative strength of given relationships. Data was analysed using the output derived through AMOS 26.0. The specific fit indexes used in this research include:

- Chi-Square Statistics (CMIN/DF in AMOS output) – Chi-Square is most appropriate for between 100 and 200 cases, and is a measure of model acceptance (Hair, et al., 1998).
- Root Mean Square Residual (RMR) – RMR specifies the square-root of the difference between the residuals of the sample covariance matrix and the hypothesised model (Hair, et al., 1998). An RMR value closer to zero indicates a better fit, with various acceptable values cited and considered as from <0.05 up to <0.08 (Byrne, 2012; Hu & Bentler, 1999).
- Root Mean Square Error of Approximation (RMSEA) – RMSEA as an absolute fit index intends to measure the discrepancy of average residuals per degree of freedom. This fit index is recommended for larger sample sizes due to the measurement of discrepancy by the population, as opposed to the sample. Brown and Cudeck (1993) suggest RMSEA values of 0.08 or less as a reasonable fit, with Hair et al. (2006) and Kline (2010) considering values <0.05 a good fit for research.
- Goodness of Fit (GFI) – GFI represents the extent observed correlation matrix is predicted by the overall model. By pertaining the proposed research model only, the GFI demonstrates an absolute interpretation (Kline, 1998). Higher GFI values indicate a better fit, with values >0.90 considered desirable (Hair, et al., 1998; Kline, 1998).
- Tucker-Lewis Index (TLI) – “the TLI combines a measure of parsimony into a comparative index between the proposed and null models” (Hair, et al., 1998, p.657).

TLI values of >0.90 are considered a good fit (Hair, et al., 1998), however, values >0.95 are recommended as more suitable (Byrne, 2012).

- Comparative Fit Index (CFI) – CFI compares the fit of the proposed model to the null (from 0 to 1). Values ≥ 0.90 are considered a good fit (Bentler & Bonett, 1980; Kline, 1998; Hair et al. 2006), with values ≥ 0.95 considered a more suitable fit (Byrne, 2012).

Due to lacking agreement on what fit indices should be used for model evaluation (Reisinger & Mavondo, 2007), current research was developed through the triangulated findings from the various model fit output produced by AMOS (v26.0). Table 4.10 presents the model fit indices in aggregate, and the respective acceptance criteria.

Table 4.10 Model Fit Indices Criteria

Test	Acceptance Criterion	Author
Chi-square (χ^2)	Probability level (p) > 0.05	Schermelleh-Engel, et al. (2003)
Normed Chi-square ($\chi^2/d.f.$)	Between 1.00-2.00 good fit; Between 2.00-3.00 reasonable fit	Byrne (2012)
Standardised root mean square residual ((S)RMR)	< 0.05 up to 0.08	Byrne (2012); Hu & Bentler (1999)
Root mean square error of approximation (RMSEA)	<0.05 good fit; up to <0.08 reasonable fit	Hair et al. (2006); Kline (2010)
Goodness of Fit (GFI)	0.90 or greater reflects a good model fit	Byrne (2012); Hair et al. (2006)
Tucker-Lewis index (TLI)	Close to or > 0.90 good fit; ≥ 0.95 better fit	Byrne (2012); Hair et al. (2006)
Comparative fit index (CFI)	Close to or > 0.90 good fit; ≥ 0.95 better fit	Byrne (2012); Hair et al. (2006)

4.8.3 Structural Equation Modelling

Structural Equation Modelling (SEM) involves analysing the structural model, described as “the set of one or more dependence relationships linking the hypothesised model’s constructs” (Hair, et al., 2006, p.583). The use of SEM indicates the extent of support for hypothesised relationships (Ko & Pastore, 2000). In addition, the contribution of each scale item is evaluated in relation to dependent and independent variable relationships (Fassinger,

1987; Hair, et al., 1998). Specifically, current research employed a Partial Least Squares Structural Equation Model (PLS-SEM). This is discussed next.

4.8.3.1 Partial Least Squares Structural Equation Modelling

Partial Least Squares Structural Equation Modelling (PLS-SEM) and Covariance Based Structural Equation Modelling (CB-SEM) are proposed methods of Structural Equation Modelling (SEM), each with differing characteristics and objectives (Richter, et al., 2016). While CB-SEM uses the covariance matrix and considers common variance to estimate model parameters, PLS-SEM uses a causal-predictive approach (Sarstedt, et al., 2017), emphasising explanation, or prediction, of a particular construct (Ringle, et al., 2020). In this way, PLS-SEM combines principal component analysis with ordinary least squares regressions (Mateos-Aparicio, 2011).

PLS-SEM is considered where restrictive assumptions of CB-SEM are violated (Hair, et al., 2011), and complex models exhibit formatively or reflectively measured constructs (Hair, et al., 2017a; Rigdon, 2016; Sarstedt, et al., 2016). Henseler et al. (2014) and Sarstedt et al. (2016) provide insight into the use of PLS-SEM, when CB-SEM methods are otherwise inadmissible or do not meet assumptions. These views demonstrate the circumstantial superiority of PLS-SEM as a statistical technique. Additionally, benefits of PLS-SEM include the ability to work and offer solutions within a large number of items and small sample sizes (Fornell & Bookstein, 1982; Hair, et al., 2017b).

In the current research, PLS-SEM has been chosen as most appropriate. This was considered as a result of a number of factors. The complexity of the model, and presence of formatively and reflectively measured constructs, position PLS-SEM as an appropriate statistical analysis technique. Furthermore, the absence of distributional assumptions (Hair, et al., 2012; do Valle & Assaker, 2016), higher degree of statistical power (Hair, et al., 2017b;

Reinartz, et al., 2009), and underlying research objectives to explore theoretical extensions support the use of PLS-SEM in the current context. PLS-SEM analysis examines the structural model, exhibiting relevant criteria distinctively for reflective and formative constructs, and adhering to guidelines to evaluate the measurement model (Chin, 1998; Chin, 2010; Henseler, et al., 2009; Hair, et al., 2017a; Hair, et al., 2019).

The reliability and validity of *reflective constructs* in the structural model are assessed through internal consistency, convergent validity, and discriminant validity. When evaluating reliability, *internal consistency* is measured through Cronbach's Alpha. In this case of PLS-SEM, Cronbach's Alpha is considered less precise due to the items being unweighted. Despite this, an acceptance threshold of >0.70 is asserted as demonstrating reliability adherence. In addition, construct validity is measured through convergent and discriminant validity. *Convergent validity* measures the correlation of construct items (Churchill, 1979). This is examined through Critical Ratio (CR) and Average Variance Extracted (AVE) values. As outlined in Section 4.8.2, statistical significance requires a conservative CR factor score of ≥ 0.70 (Hair, et al., 1998). Moreover, AVE measures the extent a construct converges to explain item variance (Hair, et al., 2019). An AVE that is >0.50 is considered as acceptable and supports convergent validity of the structural model. *Discriminant validity* demonstrates the empirical distinction between structural model constructs (Hair, et al., 2019). Traditional methods of testing discriminant validity involve cross-loadings and Fornell-Larcker criterion (Fornell & Bookstein, 1982). To be valid, shared model construct variance should not be greater than the corresponding AVEs. Finally, the Heterotrait-Monotrait (HTMT) ratio of the correlations has been proposed as a robust measure of discriminant validity (Voorhees, et al., 2016). HTMT indicates validity issues where same construct items correlation relative to the mean of the average correlations (Hair, et al., 2019). A threshold of 0.90 for structural models is proposed as acceptable by Henseler et al. (2015).

Reliability and validity of *formative constructs* in the structural model are evaluated using distinct criteria: indicator collinearity, statistical significance, and relevance of the indicator weights (Hair, et al., 2017a). *Multicollinearity* can cause unstable indicator weights and inflated standard errors, proving its significance for formative measurement models (Cenfetelli & Bassellier, 2009). To evaluate the collinearity of formative indicators the Variance Inflation Factor (VIF) is used. Critical collinearity issues are emphasised for VIF values of 5 or above (Becker, et al., 2015; Mason & Perreault, 1991), with ideal VIF values asserted as closer to 3 and lower (Hair, et al., 2019). When evaluating the *statistical significance* and *relevance of indicator weights* in PLS-SEM, bootstrapping is used (Chin, 1998). Hair et al. (2017a) suggest using the bias corrected bootstrapping confidence intervals for significance testing, interpreting the indicator's absolute contribution to the construct. The statistical significance of indicator weights is therefore measured through the interpretation of the p-value and examines the relevance of each formative indicator.

Following the evaluation of reflective and formative measurement model constructs, PLS-SEM intends to produce results that determine the interrelationships of variables and indicators. Due to the presence of reflective outer models, and single indicators in PLS-SEM, goodness of fit measures represented in Confirmatory Factor Analysis (CFA) are proposed as conceptually inappropriate (Hair, et al., 2012). Instead, it is recommended that the structural model is assessed using the coefficient of determination (R^2), effect size (f^2), the blindfolding-based cross validated redundancy measure (Q^2), and standardised root mean square residual (SRMR). A brief description of each measure follows:

- The coefficient of determination, through R^2 , measures the model's in-sample explanatory power (Shmueli & Koppius, 2011). Interpretation of R^2 sees higher values indicating greater explanatory power.

- Cohen's f^2 metric assesses the effect size of constructs. Values >0.02 , >0.15 and >0.35 depict small, medium, and large effect sizes, respectively (Cohen, 1988).
- The Q^2 metric is a measure of predictive relevance (Hair, et al., 2017a). A blindfolding procedure obtains the cross-validated redundancy Q^2 statistic (Hair, et al., 2017a). Q^2 values above 0 support predictive relevance.
- Despite PLS-SEM results considered as not representative of true global fit measures, standardised root mean square residual (SRMR) is proposed. SRMR describes the standardised difference between the observed correlation and the predicted correlation. SRMR values of < 0.05 up to 0.08 are considered a good fit (Byrne, 2012; Hu & Bentler, 1999). SRMR results are interpreted with caution, given the lack of defined relevance and usefulness for PLS-SEM.

PLS-SEM analysis was derived through the statistical software SmartPLS (Ringle, et al., 2015). Use of this program offers a path model describing variables and indicator relationships, in line with the intent of Structural Equation Modelling. PLS-SEM results are analysis and discussed in Chapter 0, 6, and 7, respectively.

4.8.4 Control Measures

Control variables are necessary in the current research as the intent is to measure and analyse correlations between variables of interest. In particular, the use of statistical control variables aims to improve the accuracy of relationship estimates and remove the potential for confounding, or extraneous, variables to influence empirical findings (Becker, et al., 2016). Control variables were employed within Research Stage Two and Research Stage Three to ensure that potential bias arising for confounding, or extraneous, variables was eliminated (Brannick, 2018).

Within Research Stage Two and Research Stage Three gender, age, and membership length (tenure) were used as control variables. The use of control measures was necessary where the focus of research was on assessing novel relationships that explain member retention. The categorical variable, gender, and continuous variable, age, were used to control for aforementioned bias. This was undertaken to ensure that potential overrepresentation of one group did not significantly influence statistical inference. Further, membership length (tenure) has been previously suggested as a determinant of member retention (McDonald, et al., 2014), and was therefore employed as a control measure in the current research. The use of control variables enables research to assess the variance in member retention attributed to model constructs (Brannick, 2018). It should be noted that unlike Research Stage Two and Research Stage Three, the aim of Research Stage One was to directly replicate the Howat and Assaker (2016) model, and explore the suitability of existing scales and relationships. As a result, control measures were not employed.

Partial Least Squares Structural Equation Modelling (PLS-SEM) was conducted separately for the exclusion and inclusion of control variables in the structural model. *Firstly*, analysis was restricted to observe only the relationships between control variables (gender, age, and tenure) and the dependent variable (member retention). *Secondly*, analysis was conducted for the structural model, maintaining control measures. This analysis enabled assertion of the variance explained by structural model constructs (process quality, outcome quality, value, satisfaction, self-efficacy, behaviour [self-reported and observed, respectively], attitudinal loyalty and behavioural loyalty) beyond control variables (Becker, et al., 2016; Brannick, 2018). In other words, a separate analysis intended to consider empirical findings attributed to variables of interest, eliminating the variance explained by control variables. These relationships were assessed within respective research stages, with analysis presented in Chapter 6 and Chapter 7.

4.8.5 Common Method Bias

Common method bias is referred to as variance attributed to the measurement method, as opposed to the construct of interest. The measurement method has the potential to reflect the response format, general context, and scale type (Fiske, 1982). This bias indicates spurious correlation resulting from repeated measurement methods for variables (Jakobsen & Jensen, 2015; Podsakoff & Todor, 1985). In this way, common method bias is viewed as the variance of the measurement model, substituting represented construct variance (Campbell & Fiske, 1959; Podsakoff, et al., 2003).

Despite availability of a number of methods to test for common method bias, Harman's Single Factor Test remains the most used and cited (Podsakoff, et al., 2003; Tehseen, et al., 2017). In this test, the emergence of a single factor, or a single factor exhibiting the majority of covariance, suggests common method bias (Tehseen, et al., 2017). To effectively carry out this test, a factor analysis is employed for all construct items. If output demonstrates no single factor as emerging, or accounting for a majority of the covariance, then it can be assumed that common method bias is a pervasive issue (Chang, et al., 2010). Harman's Single Factor Test is employed within Research Stage One, Research Stage Two, and Research Stage Three, to ensure that common method bias is not exhibited. It is noted that Harman's Single Factor Test simply demonstrates the absence or presence of common method bias but does not work to control or correct it (Tehseen, et al., 2017). This should be considered when evaluating the output of Harman's Single Factor Test.

Notwithstanding its use, Harman's Single Factor test has been criticised for inconsistency and lacking sensitivity (Fuller, et al., 2016). Therefore, accommodating for criticism, a full collinearity test (Kock, 2015) was employed as an additional test of common method bias. This test evaluates the variance inflation factors (VIFs) of all the model's latent

constructs, and has been proposed to comprehensively assess both vertical and lateral collinearity (Kock & Lynn, 2012). Specifically, the use of the full collinearity test suggests that a VIF greater than 3.3 may be affected by common method bias.

4.9 Ethical Considerations

Ethics clearance was granted prior to data collection, with the current research considered 'Low Risk'. This clearance ensured that research was conducted in a responsible and accountable way, minimising participant risk, and generating beneficial outcomes for research. The ethics application acceptance is attached in Appendix A.

Current members of a designated partner organisation fitness facility were contacted for participation. This initial contact provided potential participants with an overview of the purpose of research and their rights for participation, in line with the Plain Language Statement. Termination of response was enabled through browser exit, available at any time before response submission. Since the questionnaire was anonymous, the returned questionnaire via the web-based platform 'Formstack' was regarded as 'implied' consent. In addition, participant confidentiality was protected at all times. Deidentified member data provided to researchers was examined through unique member numbers. Assertion of unique member numbers enabled joining of attitudinal and behavioural data. In addition, any reporting of results was conducted in aggregate, whereby no participant information was disclosed.

4.10 Chapter Summary

In this chapter, the methodology for the research has been outlined. This outline defined and discussed the philosophy, strategies, and tools utilised throughout data collection and analysis. Description of the development of two discrete online questionnaire instruments

was specified. Subsequently, a discussion of behavioural data collection was provided, as exported through the data management system of the partner organisation. Following the discussion of data collection, statistical analysis techniques were reviewed. These methods included Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM). To provide a comprehensive discussion of data analysis, data cleaning, tests for normality, common method bias, the role of control variables, as well as ethical considerations, were discussed. Chapter 5, Chapter 6, and Chapter 7 now present the research findings for each of the three respective stages of research.

CHAPTER 5: DATA ANALYSIS – RESEARCH STAGE ONE

5.1 Introduction

This chapter details the data, empirical methods, and data analysis results for Research Stage One. Research Stage One replicates the Howat and Assaker (2016) model, expanding it to identify the ability of modelled constructs to explain member retention. Howat and Assaker’s framework investigates and measures the perceived quality of processes and outcomes related to member engagement with fitness facilities. Research Stage One addresses RQ1 (H1 – H4). The relevant research questions and hypotheses are summarised below in Table 5.1.

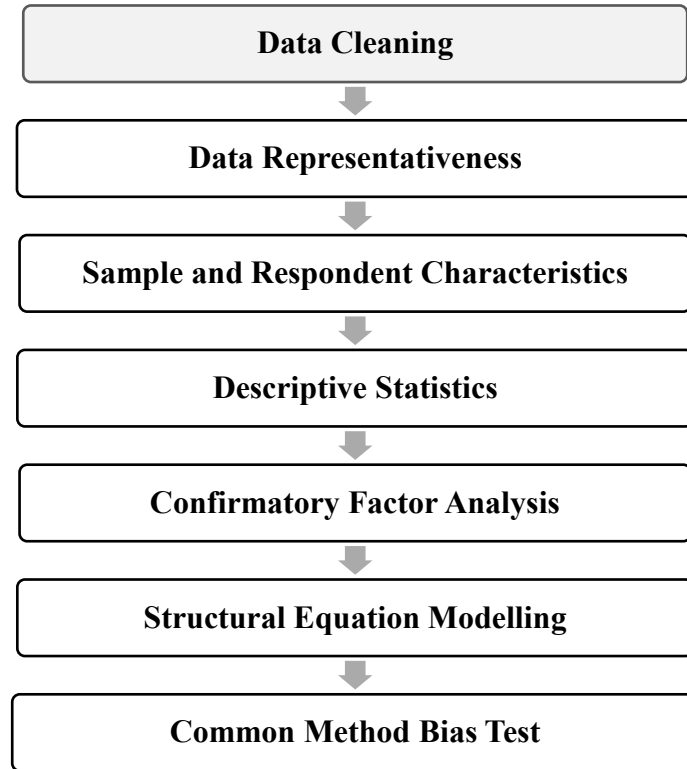
Table 5.1 Research Stage One Summary

Research Question	Hypothesis
<p>RQ1: How effective are current conceptualisations of service quality and loyalty for explaining member retention in a fitness facility context?</p>	<p>H1: Process quality has a direct, positive effect on satisfaction. H2: Outcome quality has a direct, positive effect on satisfaction. H3: Overall satisfaction has a direct, positive effect on loyalty. H4: Loyalty has a direct, positive effect on member retention.</p>

The survey data was collected via an online questionnaire completed by members of a designated fitness facility managed by the partner organisation. Following data cleaning (details below), analysis was performed, providing an overview of respondent characteristics and demonstrating the representativeness and normality of the sample data. Statistical analysis involved Confirmatory Factor Analysis (CFA) and Partial Least Squares Structural Equation Modelling (PLS-SEM). The results validated the replicated conceptual model and

examined key relationships. A summary of Research Stage One data analysis is presented in Figure 5.1.

Figure 5.1 Summary of Research Stage One Data Analysis



5.2 Data Cleaning

The Research Stage One questionnaire was sent by the partner organisation to a membership email list of 3,556 recipients. From this, 3,163 were successfully delivered (88.9%), and 1,725 recipients opened the corresponding email (54.5%). Six hundred and eighty members clicked through to view the associated questionnaire (21.5%), and 539 questionnaire responses were submitted. After data cleaning, Research Stage One comprised 511 responses, a 14.4% response rate of those invited to participate.

Data cleaning was necessary due to the number of scale items presented in the questionnaire. *Firstly*, identification of missing data was pursued through an evaluation of emerging patterns (Hair, et al., 1998; Kline, 1998). For Research Stage One, submissions

excluded from analysis were largely those with missing unique member numbers. The absence of a unique member number prevented the joining of attitudinal and behavioural data, and thus necessitated response removal. *Secondly*, a validity check was conducted to determine duplicate submissions. Duplication was identified through unique member number or IP addresses, and resulted in the removal of 11 questionnaire responses. Following data cleaning, 511 complete questionnaire responses were available for further analysis. A summary of data cleaning is presented in Table 5.2.

Table 5.2 Research Stage One Data Cleaning Summary

Data Collection Site	Total Submissions	Removed as Incomplete	Removed as Duplicate	Removed as Outlier	Total Usable Submissions
Partnered Organisation Fitness Facility Members	539	15	11	2	511

5.3 Data Representativeness

Issues of data representativeness affect how accurately the sample reflects the relevant population. Recruitment through the designated fitness facility’s membership list meant all members of the target population received an equal opportunity to partake in the questionnaire and be a part of the sample. Regardless of the opportunity to participate, investigation of the sample data was pursued to indicate whether representativeness was evident, and to attempt to control for characteristics that may be associated with an increased likelihood of participating.

Table 5.3 evaluates the gender ratio of the sample and population data for Research Stage One. This indicates a higher response rate for females than males, in comparison with the target population data. As a result of this, a higher percentage of female respondents comprised the sample population than was evident in the target population. This is a

relatively common phenomenon in the literature and corresponds with that seen in Howat and Assaker (2016), as well as in Avourdiadou and Theodorakis (2014).

Table 5.3 Research Stage One Gender Representativeness

Gender	Total Members	Percentage Members	Total Questionnaire	Percentage Questionnaire	Difference
Male	1765	42%	165	32.30%	-9.7%
Female	2441	58%	342	67%	+9.0%
Other	4	0.10%	4	0.80%	+0.7
Total	4206	-	511	-	

Table 5.4 compares the membership type ratio of the sample and population data. Evidence is given for a reasonably reflective and representative sample. Participants were required to be at least 18 years of age to partake in research. This prerequisite for participation restricted response access to many Teen Membership holders. As a result, a smaller percentage of respondents holding a teen membership were evident in the sample population, compared to the target population. Overall, results of this comparison indicated that Research Stage One participants were aligned as a representative sample from which to contrast customer attitudes and perceptions towards fitness facility engagement.

Table 5.4 Research Stage One Membership Type Representativeness

Membership Type	Total Members	Percentage Members	Total Questionnaire	Percentage Questionnaire	Difference
Complete Membership	3417	81.2%	464	90.8%	+9.6%
Aquatic Membership	178	4.2%	40	7.8%	+3.6%
Teen Membership	427	10.2%	7	1.4%	-8.8%
Other	184	4.4%	0	0%	-4.4%
Total	4206	-	511	-	

5.4 Sample and Respondent Characteristics

Respondents (n=511) of the Research Stage One questionnaire were members of a designated full-service fitness facility located in a one of the five major Australian cities. Key

characteristics include gender, age, household composition, income, employment, education, membership length, and membership type. A brief description of noteworthy respondent characteristics is presented next, with a demographic breakdown of Research Stage One participants presented in Table 5.5.

First, evaluating the gender distribution establishes that 67% of the sample were female and 32% were male. As aforementioned, while noteworthy, this is not uncommon where previous research in a fitness facility context has seen similar sample distributions (Avourdiadou & Theodorakis, 2014; Howat & Assaker, 2016). Through inclusion of control measures, consideration was given to the higher percentage of female respondents evident in comparison with the target population data. *Second*, a reasonably consistent percentage of respondents were reported to belong to each distinct age category. The smallest age category representation was those aged between 18 and 24 years (9%). The highest represented age category was those aged between 45 and 54 years (23%). *Third*, over half of the sample population were currently working either full-time, part-time or casually (62.4%), with an additional 24.5% of the sample population indicating that they had retired from work. *Fourth*, 38.7% of respondents indicated membership length greater than three years. This is significant where loyalty attitudes are evaluated. *Finally*, in total, 32% of questionnaire respondents chose not to indicate their level of income, 3% chose not to indicate their employment category, and 5% chose not to indicate their education level. Respondent characteristics are important considerations where meaning is to be derived from statistical inference, in this case for evaluation of attitudes and perceptions towards member retention behaviour.

Table 5.5 Research Stage One Participant Characteristics

Variables		N	Percentage
Gender	Female	342	66.9%
	Male	165	32.3%
	Prefer Not to Say	3	0.6%
	Other	1	0.2%
Age	18–24	44	8.6%
	25–34	53	10.4%
	35–44	78	15.3%
	45–54	115	22.5%
	55–64	109	21.3%
	65 and above	112	21.9%
Household Composition	Single/Couple with no children	108	21.1%
	Group of adults living in shared accommodation	9	1.8%
	Family with children living at home, where youngest child is under 5yrs.	71	13.9%
	Family with children living at home, where youngest child is between 5 and 15 yrs.	78	15.3%
	Family with children living at home, where youngest child is over 15 yrs.	97	19.0%
	Single/Couple whose children have left home	123	24.1%
	Other Family	25	4.9%
Income	Under \$25,000	23	4.5%
	\$25,001 to \$50,000	32	6.3%
	\$50,001 to \$75,000	65	12.7%
	\$75,001 to \$100,000	50	9.8%
	\$100,001 to \$150,000	78	15.3%
	\$150,001 to \$200,000	64	12.5%
	\$200,001 to \$300,000	27	5.3%
	Over \$300,000	13	2.5%
	Prefer Not to Say	159	31.1%
Employment	Working Full-Time	180	35.2%
	Working Part-Time or Casual	139	27.2%

Variables	N	Percentage	
	Unemployed or looking for work	4	0.8%
	Student	20	3.9%
	Retired	125	24.5%
	Home Duties	18	3.5%
	Other	8	1.6%
	Prefer Not to Say	17	3.3%
	Education	Up to Year 9 or 10	20
	Up to Year 11 or 12	73	14.3%
	TAFE / Apprenticeship / Diploma	85	16.6%
	Undergraduate Degree	122	23.9%
	Postgraduate Degree	113	22.1%
	Masters / PhD	55	10.8%
	Something Else	17	3.3%
	Prefer Not to Say	26	5.1%
Membership Length	Less than three months	133	26.0%
	Between three months and six months	64	12.5%
	Between six months and one year	51	10.0%
	Between one year and two years	36	7.0%
	Between two years and three years	29	5.7%
	More than three years	198	38.7%
Membership Type	Complete Membership	464	90.8%
	Aquatic Membership	39	7.6%
	Swim School Membership	1	0.2%
	Teen Membership	7	1.4%

5.5 Descriptive Statistics

While PLS-SEM relaxes the assumption of multivariate normality (Hair, et al., 2012; Hair, et al., 2014b), statistical evaluation was undertaken to assess the potential for large variation of data. Normality of response to individual questions was assessed through skewness and kurtosis, demonstrating skewness ranging between -1.906 and +0.216 for specific survey questions and kurtosis ranging between -1.269 and +4.627. Given PLS-SEM is credited as capable of dealing within non-normal data (Hair, et al., 2012; Hair, et al., 2014b), and customer experience is expected to demonstrate some similarity across cases (Allen & Rao, 2000; Peterson & Wilson, 1992), minor skewness and kurtosis should not invalidate the proceeding methods and results (Field, 2009). Less stringent thresholds suggested by Kendall and Stuart (1958) were adopted for skewness and kurtosis, as outlined in Section 4.8.1.3. In total, 48% of items fell within the stringent acceptance criteria for skewness and kurtosis (± 2) (Field, 2009; Gravetter & Wallnau, 2014; Trochim & Donnelly, 2006), with 100% of items falling within the conservative range of ± 3 for skewness, and ± 5 for kurtosis (Kendall & Stuart, 1958). Skewness and kurtosis results for Research Stage One are presented in Table 5.6, with no items presented as concerning.

Table 5.6 Research Stage One Skewness and Kurtosis

Questionnaire Item Label	N	Mean	Skewness	Kurtosis
OQ1	511	3.54	0.084	-1.269
OQ2	511	3.41	0.198	-1.194
OQ3	511	3.33	0.216	-1.148
OQ4	511	4.14	-0.217	-1.146
OQ5	511	4.25	-0.317	-1.106
OQ6	511	6.12	-1.773	4.484
OQ7	511	6.14	-1.855	4.584
OQ8	511	6.01	-1.734	3.843
OQ9	511	5.64	-1.382	1.750
OQ10	511	5.50	-1.037	0.708
OQ11	511	5.80	-1.525	2.450
PQ1	511	5.80	-1.443	2.241
PQ2	511	5.79	-1.379	1.987
PQ3	511	5.82	-1.387	2.104
PQ4	511	5.50	-0.980	0.807
PQ5	511	5.71	-1.092	1.065
PQ6	511	5.92	-1.486	3.049
PQ7	511	5.82	-1.206	1.677
PQ8	511	5.78	-1.160	1.577
PQ9	511	5.35	-0.755	0.094
PQ10	511	4.91	-0.746	-0.485
PQ11	511	6.08	-1.548	2.787
PQ12	511	5.96	-1.426	2.159
PQ13	511	6.26	-1.881	4.627
PQ14	511	5.86	-1.297	1.708
SAT1	511	8.19	-1.522	3.658
SAT2	511	8.15	-1.475	3.102
VALUE1	511	5.70	-0.966	0.969
VALUE2	511	5.58	-1.039	1.198
BI1	511	8.41	-1.676	4.217
BI2	511	7.90	-1.432	2.146
BI3	511	8.36	-1.906	4.606

5.6 Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) was undertaken to investigate and potentially validate hypothesised relationships between observed variables and latent constructs within the theoretical model (Byrne, 2001). Initially, CFA was undertaken to develop measurement

models distinctly for Process Quality (Section 5.6.1), Outcome Quality (Section 5.6.2) and Latent Constructs (Section 5.6.3). This was due to the presence of formative and reflective constructs. Construct measurement models were replicated from Howat and Assaker (2016) and were constructed using AMOS (v26). Measurement model testing was performed to evaluate the proposed model’s suitability, using statistical tools to determine model fit. Given that the genesis of Research Stage One lies in existing research, and the measures have been supported previously, CFA is an appropriate technique to examine measurement issues.

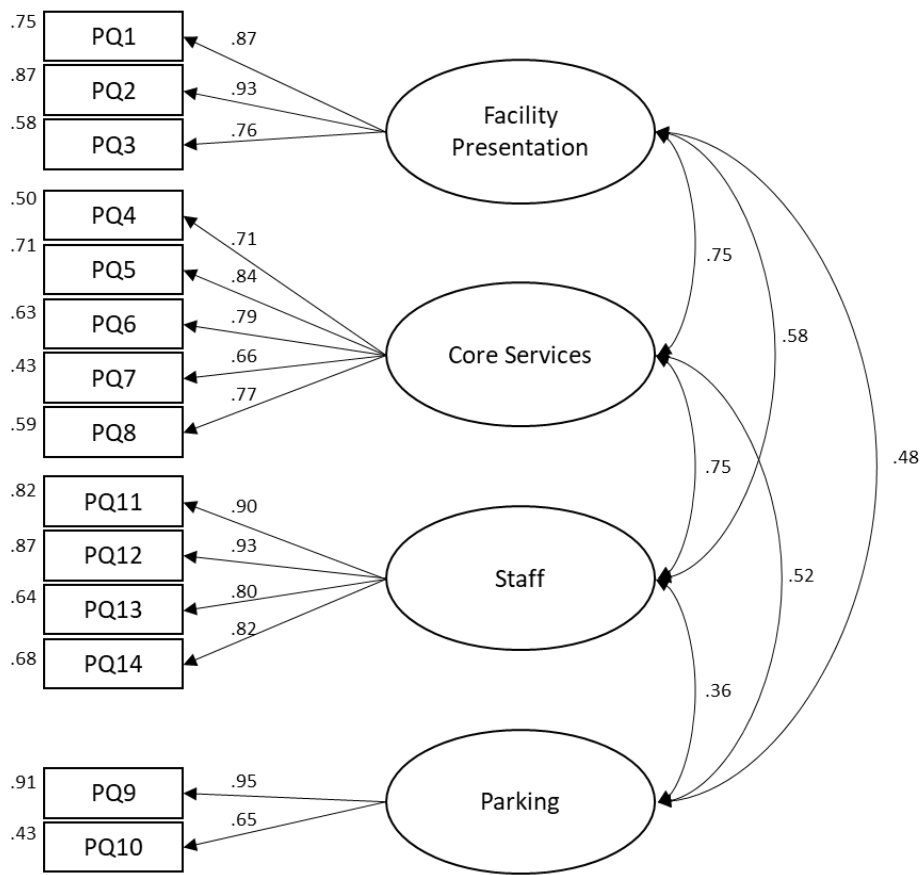
5.6.1 Process Quality

The process quality measurement model comprises four lower-order dimensions replicated from Howat and Assaker (2016): facility presentation, core services, staff, and parking. These lower-order dimensions and corresponding subdimensions have previously been developed and tested for reliability and validity, returning direct positive results (Howat & Assaker, 2013; 2016). Such results support inclusion in the measurement model. The measurement model for process quality was established using AMOS v26.0, and is presented in Figure 5.2. A number of criteria are available to determine measurement model suitability. These criteria were expressed as model fit measures and are provided in Table 5.7. Model fit measures largely adhered to cut-off points outlined in Section 4.8.2, but with a RMSEA value exceeding acceptance criteria. Despite this, inclusion of reflective constructs within the PLS-SEM deem goodness of fit measures as conceptually inappropriate (Hair, et al., 2012), and therefore the construct was maintained for subsequent analysis.

Table 5.7 Fit Measures: Process Quality

Process Quality (n=511)	CMIN	DF	CMIN/DF	RMR	RMSEA	GFI	TLI	CFI
Research Stage One	410.012	71	5.775	.079	.097	.895	.913	.932

Figure 5.2 Measurement Model: Process Quality



Cronbach's Alpha was used to test the internal consistency of process quality. Results are presented in Table 5.8, with all observed values falling above the recommended cut-off outlined in Section 4.8.2. As such, the process quality items were acceptable with a high internal consistency. In addition, item-to-total correlations ranged from 0.38 to 0.79 and support internal consistency. Specifically, all values, with three exceptions (i.e., PQ7, PQ9, and PQ10), were greater than 0.65. Overall, no items within the measurement model warranted removal: the results indicated acceptable reliability.

Table 5.8 Research Stage One: Process Quality Reliability and Construct Validity

Scale Items	Items	Item-to-Total	Means	Standard
Facility Presentation $\alpha= 0.884$	PQ1	0.66	5.80	1.287
	PQ2	0.72	5.79	1.265
	PQ3	0.70	5.82	1.229
Core Services $\alpha= 0.866$	PQ4	0.65	5.50	1.347
	PQ5	0.79	5.71	1.217
	PQ6	0.70	5.92	1.116
	PQ7	0.58	5.82	1.192
	PQ8	0.69	5.78	1.172
Staff $\alpha= 0.919$	PQ11	0.68	6.08	1.121
	PQ12	0.72	5.96	1.201
	PQ13	0.69	6.26	0.993
	PQ14	0.72	5.86	1.258
Parking $\alpha= 0.751$	PQ9	0.55	5.35	1.381
	PQ10	0.38	4.91	1.813

Discriminant validity was evaluated through Average Variance Extracted (AVE). The AVE figures and squared correlation for the process quality measurement model are listed in Table 5.9. These results indicated no cause for validity concerns. The presented AVE values exceeded the recommended cut-off outlined in Section 4.8.2, and were greater than the squared correlation values. These results supported the inter-construct validity of the lower-order process quality dimensions used in Research Stage One.

Table 5.9 Research Stage One: Process Quality Discriminant Validity

	CR	AVE	MSV	Max R(H)	Core Services	Facility Presentation	Staff	Parking
Core Services	0.868	0.571	0.567	0.879	0.756			
Facility Presentation	0.891	0.734	0.567	0.917	0.753	0.857		
Staff	0.923	0.751	0.561	0.938	0.749	0.582	0.867	
Parking	0.797	0.670	0.272	0.917	0.522	0.477	0.356	0.818

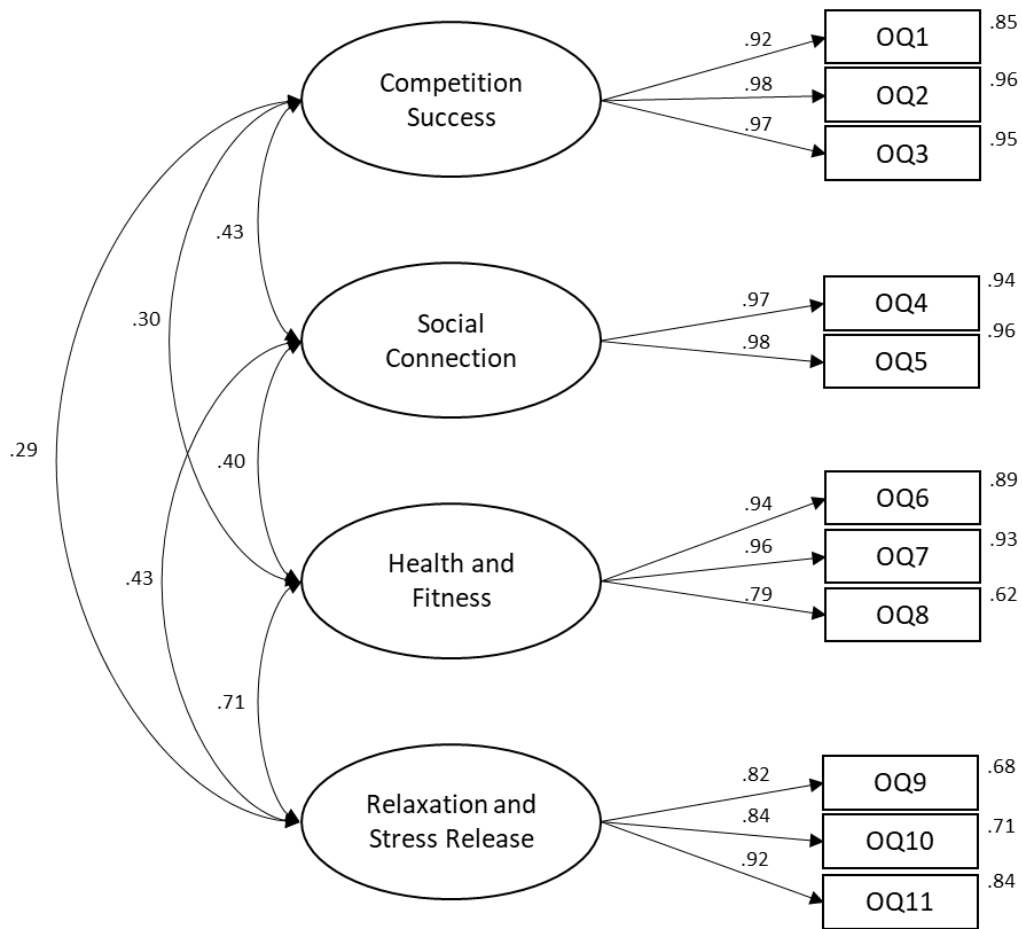
5.6.2 Outcome Quality

The outcome quality measurement model comprised four lower-order dimensions following Howat and Assaker (2016), including: competition success, social connection, health and fitness, and relaxation and stress release. These scale items were considered appropriate for inclusion where previous testing for reliability and validity returned direct positive results (Howat & Assaker, 2016). The measurement model for outcome quality was implemented using AMOS v26.0, and is presented in Figure 5.3. Model fit measures are presented in Table 5.10, and largely adhered to cut-off points outlined in Section 4.8.2, but with RMR and RMSEA values exceeding acceptance criteria. Despite this, inclusion of reflective constructs within the PLS-SEM deem goodness of fit measures as conceptually inappropriate (Hair, et al., 2012), and therefore the construct was maintained for subsequent analysis.

Table 5.10 Fit Measures: Outcome Quality

Outcome Quality (n=511)	CMIN	DF	CMIN/DF	RMR	RMSEA	GFI	TLI	CFI
Research Stage One	286.62	38	7.543	0.106	0.113	0.918	0.943	0.961

Figure 5.3 Measurement Model: Outcome Quality



Internal consistency was assessed through Cronbach's Alpha and item-to-total correlations for each of the scale items in Figure 5.3. Results of this analysis are presented in Table 5.11. For lower-order outcome quality dimensions, Cronbach's Alpha values ranged from 0.895 to 0.974. These estimates were greater than the cut-off identified in Section 4.8.2, and indicated an acceptable degree of internal consistency. Item-to-total correlations ranged from 0.75 to 0.95, exceeding the acceptance criteria. In summary, the results indicated the reliability of the outcome quality measurement model.

Table 5.11 Research Stage One: Outcome Quality Reliability and Construct Validity

Scale Items	Items	Item-to-Total	Means	Standard
Competition Success $\alpha= 0.970$	OQ1	0.91	3.54	2.046
	OQ2	0.95	3.41	2.007
	OQ3	0.95	3.33	1.958
Social Connection $\alpha= 0.974$	OQ4	0.95	4.14	2.001
	OQ5	0.95	4.25	2.011
Health and Fitness $\alpha= 0.919$	OQ6	0.88	6.12	1.069
	OQ7	0.89	6.14	1.096
	OQ8	0.75	6.01	1.181
Relaxation and Stress Release $\alpha= 0.895$	OQ9	0.77	5.64	1.466
	OQ10	0.78	5.50	1.455
	OQ11	0.83	5.80	1.342

Validity of the outcome quality measurement model was supported through assessment of Average Variance Extracted (AVE). The figures and correlations presented in Table 5.12 demonstrate acceptable AVE, and support the inter-construct discriminant validity of the outcome quality measurement model. Overall, the outcome quality measurement model was supported as suitable for inclusion in the structural model.

Table 5.12 Research Stage One: Outcome Quality Discriminant Validity

	CR	AVE	MSV	Max R(H)	Health and Fitness	Competition Success	Social Connection	Relaxation and Stress Release
Health and Fitness	0.928	0.813	0.503	0.958	0.902			
Competition Success	0.971	0.917	0.183	0.979	0.297	0.958		
Social Connection	0.974	0.950	0.183	0.976	0.398	0.428	0.975	
Relaxation and Stress Release	0.896	0.743	0.503	0.909	0.709	0.294	0.428	0.862

5.6.3 Latent Constructs

Following Howat and Assaker (2016), value and satisfaction constructs were each measured using two scale items. Additionally, loyalty was conceptualised as a one-dimensional

construct, and measured using three attitudinal scale items. The present research recognised the previous support found for construct reliability and validity, permitting adoption within the Research Stage One measurement model. The measurement model for latent constructs was implemented using AMOS v26.0, and is presented in Figure 5.4. Model fit measures largely adhered to cut-off points and are presented in Table 5.13, but with RMR and RMSEA values exceeding acceptance criteria. Despite this, use of PLS-SEM deemed goodness of fit measures as conceptually inappropriate (Hair, et al., 2012), and therefore the assessed latent constructs were maintained for subsequent analysis.

Table 5.13 Fit Measures: Latent Constructs

Satisfaction, Value and Loyalty (n=511)	CMIN	DF	CMIN/DF	RMR	RMSEA	GFI	TLI	CFI
Research Stage One	97.062	11	8.824	0.096	0.124	0.946	0.946	0.972

As with the previous constructs, the latent constructs and scale items comprising latent constructs, were tested for internal reliability. These measures exceeded recommended levels. Individual loadings on each respective construct were high (from 0.84 to 0.94), indicating that the latent constructs were well defined by the scale items in the context of the conceptual framework. The results of reliability testing are presented in Table 5.14.

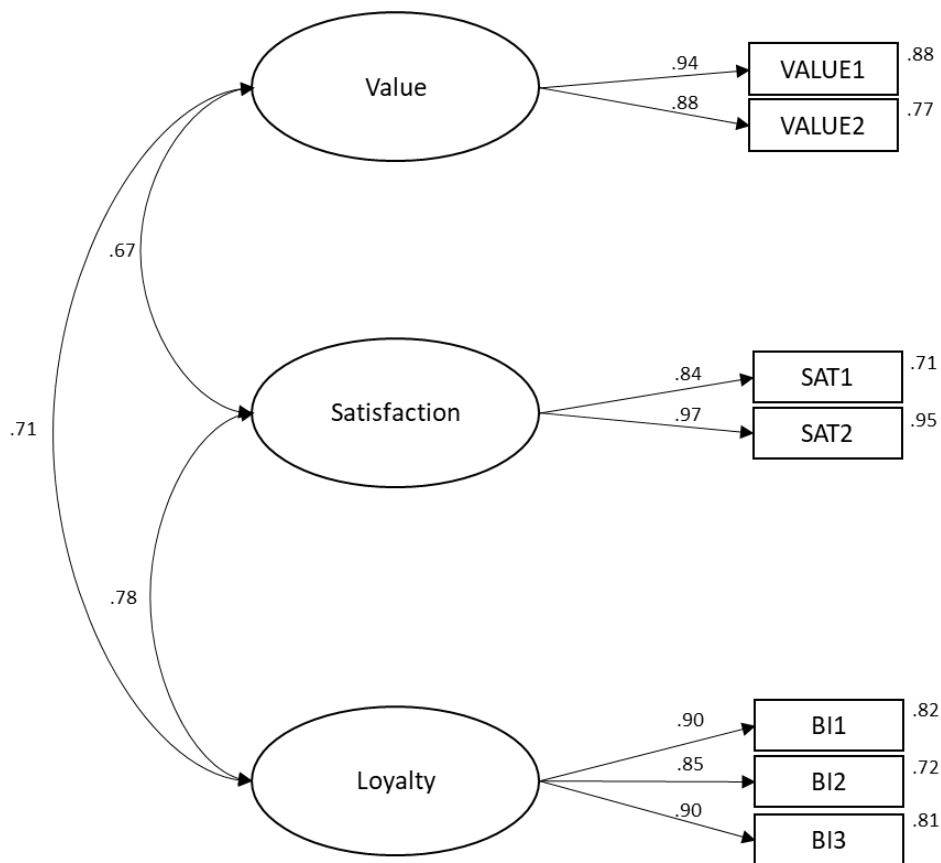
Cronbach's Alpha values for latent constructs are demonstrated as ranging from 0.90-0.914.

These values supported internal consistency of the measurement model (Hair, et al., 2006).

Table 5.14 Reliability and Construct Validity: Latent Constructs

Scale Items	Items	Item-to-Total	Means	Standard
Value $\alpha= 0.901$	VALUE1	0.73	5.70	1.185
	VALUE2	0.67	5.58	1.298
Satisfaction $\alpha= 0.900$	SAT1	0.71	8.19	1.699
	SAT2	0.81	8.15	1.699
Loyalty $\alpha= 0.914$	BI1	0.86	8.41	1.676
	BI2	0.75	7.90	2.152
	BI3	0.82	8.36	1.950

Figure 5.4 Measurement Model: Value, Satisfaction and Loyalty



Standardised correlation and covariance matrixes were examined to establish the discriminant validity of the latent constructs. Results are presented in Table 5.15 and show AVE values between 0.79-0.83. These results exceeded acceptance thresholds and indicated that the latent constructs were well defined by the scale items in the measurement model.

Table 5.15 Discriminant Validity: Latent Constructs

	CR	AVE	MSV	Max R(H)	Loyalty	Value	Satisfaction
Loyalty	0.919	0.791	0.615	0.923	0.889		
Value	0.904	0.825	0.506	0.915	0.711	0.909	
Satisfaction	0.905	0.827	0.615	0.953	0.784	0.673	0.909

Overall, the measurement model results for Research Stage One supported construct reliability and validity for process quality, outcome quality, value, satisfaction, and loyalty.

Results corresponded with those provided by Howat and Assaker (2016) and supported the

measurement models as suitable for use in the conceptual framework. Following measurement model support, structural equation modelling was undertaken to test and confirm interrelationships between observed and latent variables. The results of this analysis are discussed next.

5.7 Structural Equation Modelling

In Section 4.8.3.1, the reasons for favouring Partial Least Squares Structural Equation Modelling (PLS-SEM) as the preferred modelling technique for this research were discussed. Specifically, the complexity of the conceptual model, the absence of distributional assumptions, and the higher degree of statistical power were all considerations that led to this methodological choice. The resulting PLS-SEM investigation was implemented using the SmartPLS statistical software. The Structural Equation Model shown in Figure 5.5 focuses specifically on the relationships between latent constructs. The following sections assess reflective and formative model measures, and relationships. Table 5.17 shows the results of the reflective and formative measures.

5.7.1 Assessing Reflective Measurement Model Constructs

To assess the reliability and validity of reflective measures, examination proceeded in line with techniques and thresholds outlined in Section 4.8.2. These techniques included the assessment of internal consistency, convergent validity, and discriminant validity.

Cronbach's Alpha was used to evaluate *internal consistency*. Results adhered to the threshold asserted in Section 4.8.2, ranging from 0.768-0.974 (Table 5.17). These results supported the reliability of the structural model. Furthermore, an evaluation of indicator loadings is presented in Table 5.17. Indicator loadings are demonstrated as larger than 0.70, establishing reliability (Ali, et al., 2018).

Convergent validity was assessed through an evaluation of Composite Reliability (CR) and the Average Variance Extracted (AVE). The Research Stage One structural model demonstrated CR values between 0.894 – 0.987, and supported the validity of the structural model (Table 5.17). In addition, the output derived demonstrated structural model constructs as producing AVE values between 0.657 and 0.975 (Table 5.17), satisfying the threshold and supporting the convergent validity of each construct measure.

Finally, an assessment of *discriminant validity* was necessary for reflective measurement models, and was undertaken through assessment of the Heterotrait-Monotrait (HTMT) ratio. HTMT results depicted values ranging from 0.028 to 0.738 (Table 5.16) and supported the discriminant validity of the Research Stage One reflective constructs.

Table 5.16 Research Stage One Data HTMT

	Loyalty	Outcome Quality	Process Quality	Satisfaction	Value
Loyalty	0.000	0.000	0.000	0.000	0.000
Outcome Quality	0.363	0.000	0.000	0.000	0.000
Process Quality	0.684	0.426	0.000	0.000	0.000
Retention	0.097	0.064	0.052	0.000	0.000
Satisfaction	0.719	0.340	0.738	0.053	0.000
Value	0.649	0.326	0.648	0.028	0.614

5.7.2 Assessing Formative Measurement Model Constructs

Formative structural models were evaluated using the distinct criteria depicted in Section 4.8.3. Results of this analysis are presented in Table 5.17. To evaluate the *collinearity* of formative indicators, the Variance Inflation Factor (VIF) was used. Formative constructs of process quality and outcome quality indicated that VIF scores were less than 3 (Table 5.17). VIF value adherence supported that dimensions are not highly correlated in explaining their respective constructs. As a result, higher-order factors were retained in the outer measurement model, paralleling that of Howat and Assaker (2016).

When evaluating the *statistical significance* in PLS-SEM, bootstrapping was used (Chin, 1998). The results of the bootstrap tests depicted high significance levels for facility presentation, core services, staff, and parking loadings on the process quality construct. As can be seen, competition success, social connection, health and fitness, and relaxation and stress release were all highly significant with respect to the outcome quality construct. In both cases the bootstrap-based empirical 95% confidence interval did not include zero and demonstrated significant p-values (Table 5.17).

Finally, the *relevance of indicator weights* was investigated. In all cases for process quality and outcome quality, the outer weights indicated a significant, but weak-to-moderate relationship with their corresponding construct. For process quality outer weights, the estimated coefficients were 0.299 for facility presentation, 0.376 for core services, 0.337 for staff, and 0.207 for parking. Conversely, for outcome quality outer weights, the estimated coefficients were 0.130 for competition success, 0.276 for social connection, 0.434 for health and fitness, and 0.419 for relaxation and stress release.

Table 5.17 Research Stage One PLS-SEM Measurement Model Results

Construct	Item						
Reflective Measures		Loading	Composite Reliability	AVE	Cronbach's α	Mean	Standard Deviation
Value	VALUE1	0.956**	0.954	0.912	0.903	5.70	1.18
	VALUE2	0.953**				5.58	1.30
Satisfaction	SAT1	0.947**	0.952	0.909	0.900	8.19	1.70
	SAT2	0.960**				8.15	1.70
Loyalty	BI1	0.928**	0.949	0.860	0.919	8.41	1.67
	BI2	0.943**				7.91	2.15
	BI3	0.912**				8.36	1.95
Formative Measures		Outer Weight	VIF		Bias Corrected 95% CI	P Value	
Process Quality	Facility	0.299**	2.029		[0.277; 0.320]	0.000	
	Core Services	0.376**	2.665		[0.350; 0.407]	0.000	
	Staff	0.337**	1.974		[0.311; 0.364]	0.000	
	Parking	0.207**	1.305		[0.172; 0.239]	0.000	
Outcome Quality	Competition	0.130**	1.229		[0.022; 0.217]	0.009	
	Social	0.276**	1.381		[0.188; 0.358]	0.000	
	Health and	0.434**	2.153		[0.367; 0.510]	0.000	
	Relaxation and	0.419**	2.128		[0.364; 0.482]	0.000	
Lower Order (Reflective) Measures		Loading	Composite Reliability	AVE	Cronbach's α	Mean	Standard Deviation
Facility Presentation	PQ1	0.904**	0.928	0.812	0.884	5.80	1.287
	PQ2	0.934**				5.79	1.265
	PQ3	0.865**				5.82	1.229
Core Services	PQ4	0.765**	0.905	0.657	0.868	5.50	1.347
	PQ5	0.848**				5.71	1.217
	PQ6	0.851**				5.92	1.116
	PQ7	0.744**				5.82	1.192

Construct	Item						
	PQ8	0.838**				5.78	1.172
Staff	PQ11	0.917**	0.945	0.810	0.921	6.08	1.121
	PQ12	0.932**				5.96	1.201
	PQ13	0.868**				6.26	.993
	PQ14	0.881**				5.86	1.258
Parking	PQ9	0.931**	0.894	0.809	0.768	5.35	1.381
	PQ10	0.867**				4.91	1.813
Competition Success	OQ1	0.956**	0.981	0.944	0.970	3.54	2.046
	OQ2	0.980**				3.41	2.007
	OQ3	0.978**				3.33	1.958
Social Connection	OQ4	0.987**	0.987	0.975	0.974	4.14	2.001
	OQ5	0.987**				4.25	2.011
Health and Fitness	OQ6	0.945**	0.950	0.864	0.921	6.12	1.069
	OQ7	0.953**				6.14	1.096
	OQ8	0.890**				6.01	1.181
Relaxation and Stress Release	OQ9	0.897**	0.935	0.828	0.896	5.64	1.466
	OQ10	0.903**				5.50	1.455
	OQ11	0.929**				5.80	1.342

Note: We used a bootstrapping routine (Hair, et al., 2017a) with 5000 sub-sample. ** $p < 0.05$.

5.7.3 Common Method Bias Test: Structural Model

Since attitudinal data was collected from a single source, there was potential for relationships to be affected by common method bias (Podsakoff, et al., 2003). Common method bias compromises validity of results (Kock, 2015; Podsakoff, et al., 2003), and should be controlled through procedural and statistical methods. In the current research, an attempt to reduce evaluation apprehension through anonymity of response was pursued. Informed by the existing literature, the current study utilised the Harman’s Single Factor Test (Podsakoff, et al., 2003) and a full collinearity test (Kock, 2015) to evaluate the presence or absence of common method bias.

Harman’s Single-Factor Test involved analysing all items of latent constructs (process quality, outcome quality, value, satisfaction, and loyalty) using the dimension reduction factor. The output (Table 5.18) revealed the first unrotated factor captured 37% of the variance in data. These results determined that the first factor did not capture greater than 50% of the variance in the data (Tehseen, et al., 2017), supporting that absence of common method bias in Research Stage One. Despite results, Harman’s Single Factor test has been criticised for inconsistency and lacking sensitivity (Fuller, et al., 2016). In response to such critique, a second measure of common method bias testing was also employed.

Table 5.18 Common Method Bias: Harman’s Single Factor Test

Initial Eigenvalues				Extraction Sums of Squared		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1	12.264	37.164	37.164	12.264	37.164
2	2	4.678	14.175	51.339		
3	3	2.533	7.676	59.015		
4	4	1.657	5.023	64.037		
5	5	1.450	4.393	68.430		
6	6	1.224	3.710	72.140		
7	7	1.082	3.278	75.418		

To provide a comprehensive assessment of potential common method bias, a full collinearity test was conducted. This test proposes evaluation of the variance inflation factors (VIFs) of all the model's latent constructs. For Research Stage One latent constructs the maximum variance inflation factor was 2.535, and was below the threshold value of 3.3 suggested by Kock (2015, p. 7). The output (Table 5.19) indicated an absence of common method bias impact within the Research Stage One model.

Table 5.19 Common Method Bias: Collinearity Approach

	Loyalty	Outcome Quality	Process Quality	Satisfaction	Value
Loyalty	0.000	2.535	2.476	2.500	2.134
Outcome Quality	1.175	0.000	1.151	1.137	1.187
Process Quality	2.145	2.201	0.000	1.458	1.931
Retention	1.014	1.024	1.012	0.000	1.025
Satisfaction	2.173	2.626	2.265	2.37	0.000
Value	1.779	1.971	1.888	1.938	1.918

5.7.4 Assessing the Structural Model

Following the evaluation of reflective and formative constructs in Section 5.7.1 and Section 5.7.2, the structural model was assessed. This assessment was achieved through a number of statistical evaluation techniques, including coefficient of determination (R^2), effect size (f^2), the blindfolding-based cross validated redundancy measure (Q^2), and the standardised root mean square residual (SRMR). These results are presented in Table 5.20.

R^2 measures the model's in-sample explanatory power (Shmueli & Koppius, 2011). Latent construct R^2 values were: value $R^2 = 0.362$; satisfaction $R^2 = 0.536$; loyalty $R^2 = 0.517$; and retention $R^2 = 0.010$. When analysing individual relationships, we found significance for all process quality, value, and satisfaction relationships. The most significant path coefficient was demonstrated for that of satisfaction and loyalty (0.719), which is consistent with the results of Howat and Assaker (2016). Our results did not indicate a significant relationship of

outcome quality and satisfaction at the 0.05 level (Table 5.20), which differs from the results of Howat and Assaker (2016). Finally, significance could not be supported for the relationship between loyalty and retention (Table 5.20). Non-significance suggests that broader consideration needs to be made into the feasibility of this relationship.

The effect sizes of constructs through the f^2 metric were also assessed in line with effect groupings outlined in Section 4.8.3. Results demonstrated large f^2 effect sizes for the relationships between process quality and value ($f^2 = 0.426$), and satisfaction and loyalty ($f^2 = 1.072$); medium effect sizes for the relationships between process quality and satisfaction ($f^2 = 0.296$), and value and satisfaction ($f^2 = 0.136$); and non-significant effect sizes for the relationships between outcome quality and value ($f^2 = 0.013$), outcome quality and satisfaction ($f^2 = 0.003$), and loyalty and retention ($f^2 = 0.010$).

In addition, predicative relevance of the structural model results was evaluated through the Q^2 metric (Hair, et al., 2017a). The Q^2 statistic of value ($Q^2 = 0.355$), satisfaction ($Q^2 = 0.520$), loyalty ($Q^2 = 0.511$), and retention ($Q^2 = 0.005$) were respectively above zero, supporting predictive relevance.

Finally, the standardised root mean square residual (SRMR) was measured to assess discriminant validity and model fit. The Research Stage One SRMR was demonstrated as 0.075, and implied good model fit.

Table 5.20 Research Stage One Measurement Model Results

Relationships	Path Coefficient	T Statistic	P Value	Bias Corrected 95% CI	f ²	q ²
Process Quality → Value	0.559	16.789	0.000	[0.491; 0.621]	0.426	0.419
Process Quality → Satisfaction	0.475	7.985	0.000	[0.350; 0.583]	0.296	0.285
Outcome Quality → Value	0.098	2.277	0.023	[0.010; 0.179]	0.013	0.008
Outcome Quality → Satisfaction	0.057 _{ns}	1.693	0.091	[-0.011; 0.120]	0.006	-0.008
Value → Satisfaction	0.315	6.258	0.000	[0.220; 0.419]	0.136	0.125
Satisfaction → Loyalty	0.719	17.104	0.000	[0.625; 0.788]	1.072	0.194
Loyalty → Retention	0.097 _{ns}	1.901	0.057	[0.004; 0.203]	0.010	0.006

Note: ns refers to non-significant effects at the 0.05 level. All other effects significant at $p < 0.05$.

R^2 (Value = 0.362; Satisfaction = 0.536; Loyalty = 0.517; Retention = 0.010). Effect size impact indicators are according to Cohen (1988), f^2 values: 0.35 (large), 0.15 (medium), 0.02 (small). Q^2 (Value = 0.355; Satisfaction = 0.520; Loyalty = 0.511; Retention = 0.005); Predictive relevance (q^2) of Predictor Exogenous Latent Variables as according to Henseler, et al. (2009), q^2 values: 0.35 (large), 0.15 (medium), and 0.02 (small).

5.7.5 Direct, Indirect and Total Effects

The direct, indirect, and total effects among the Research Stage One structural model constructs are summarised in Table 5.21. When examining the total effects of constructs on loyalty, satisfaction demonstrates the highest positive significant effect (0.719), followed by process quality (0.468), and value (0.226). Alternatively, outcome quality had the lowest considered effect on loyalty (0.063). Furthermore, when examining the total effects of constructs on retention, all relationships were interpreted as non-significant. Of these non-significant relationships, loyalty demonstrated the highest positive effect (0.097), followed by satisfaction (0.070), and outcome quality (0.063).

When assessing the lower-order dimensions of process quality, it was shown that core services and staff were the most prominent drivers affecting loyalty. This finding replicates and confirms the results of Howat and Assaker (2016). Key loyalty drivers of the outcome

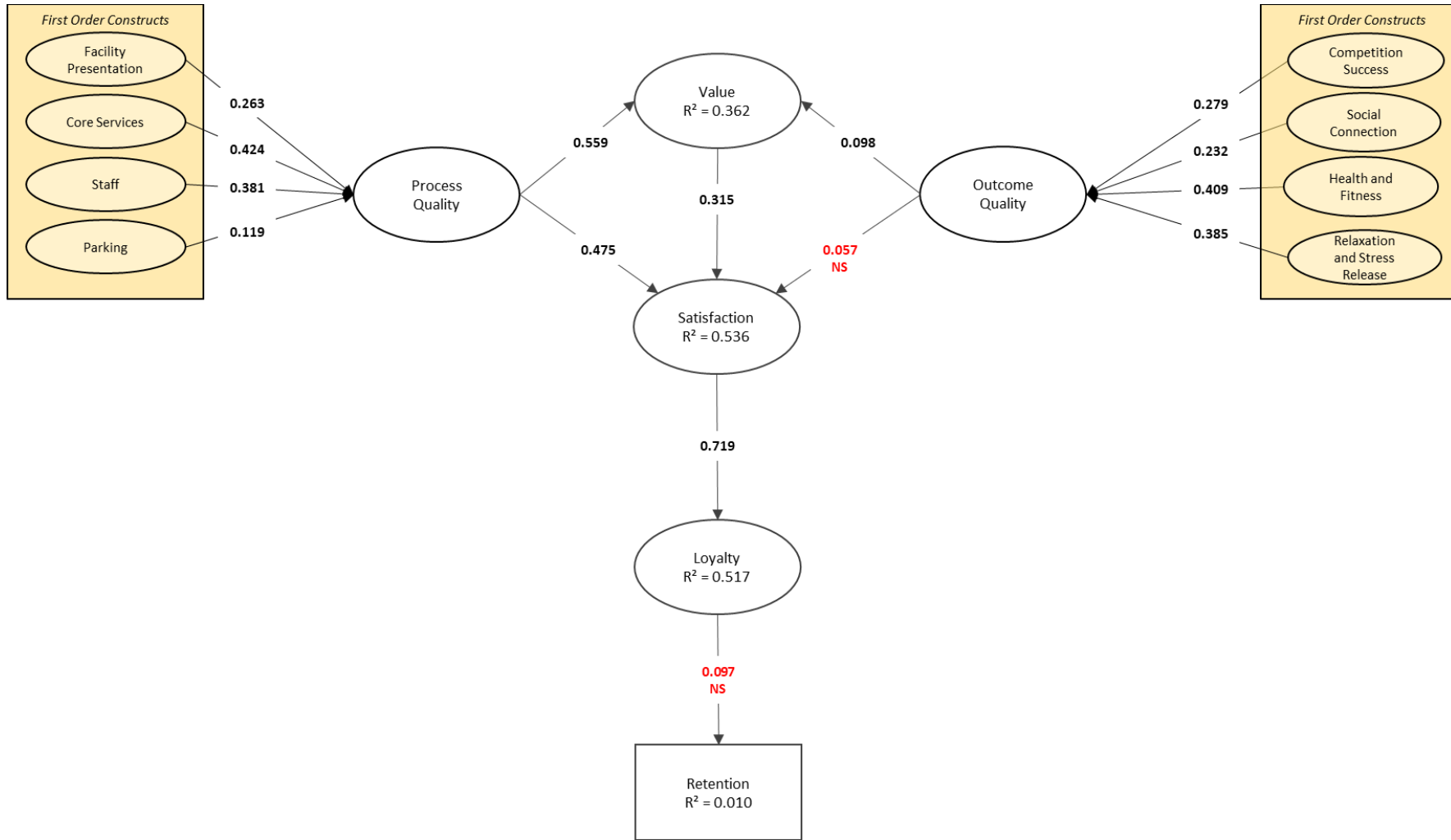
quality construct were depicted as health and fitness, and relaxation and stress release (Table 5.21).

Table 5.21 Research Stage One Inner Model Effects (PLS-SEM)

Path	Direct	Indirect	Total
Process Quality → Value	0.559	0.000	0.559
Facility Presentation → Value	0.000	0.150	0.150
Core Services → Value	0.000	0.241	0.241
Staff → Value	0.000	0.216	0.216
Parking → Value	0.000	0.068	0.068
Process Quality → Satisfaction	0.475	0.176	0.651
Facility Presentation → Satisfaction	0.000	0.176	0.176
Core Services → Satisfaction	0.000	0.284	0.284
Staff → Satisfaction	0.000	0.255	0.255
Parking → Satisfaction	0.000	0.080	0.080
Process Quality → Loyalty	0.000	0.468	0.468
Facility Presentation → Loyalty	0.000	0.127	0.127
Core Services → Loyalty	0.000	0.204	0.204
Staff → Loyalty	0.000	0.183	0.183
Parking → Loyalty	0.000	0.057	0.057
Process Quality → Retention	0.000	0.046	0.046
Facility Presentation → Retention	0.000	0.012	0.012
Core Services → Retention	0.000	0.020	0.020
Staff → Retention	0.000	0.018	0.018
Parking → Retention	0.000	0.006	0.006
Outcome Quality → Value	0.098	0.000	0.098
Competition Success → Value	0.000	0.023	0.023
Social Connection → Value	0.000	0.019	0.019
Health and Fitness → Value	0.000	0.033	0.033
Relaxation and Stress Release → Value	0.000	0.031	0.031
Outcome Quality → Satisfaction	0.057	0.031	0.088
Competition Success → Satisfaction	0.000	0.018	0.018
Social Connection → Satisfaction	0.000	0.015	0.015
Health and Fitness → Satisfaction	0.000	0.027	0.027
Relaxation and Stress Release → Satisfaction	0.000	0.025	0.025
Outcome Quality → Loyalty	0.000	0.063	0.063
Competition Success → Loyalty	0.000	0.013	0.013
Social Connection → Loyalty	0.000	0.011	0.011
Health and Fitness → Loyalty	0.000	0.019	0.019

Path	Direct	Indirect	Total
Relaxation and Stress Release → Loyalty	0.000	0.018	0.018
Outcome Quality → Retention	0.000	0.006	0.006
Competition Success → Retention	0.000	0.001	0.001
Social Connection → Retention	0.000	0.001	0.001
Health and Fitness → Retention	0.000	0.002	0.002
Relaxation and Stress Release → Retention	0.000	0.002	0.002
Value → Satisfaction	0.315	0.000	0.315
Value → Loyalty	0.000	0.226	0.226
Value → Retention	0.000	0.022	0.022
Satisfaction → Loyalty	0.719	0.000	0.719
Satisfaction → Retention	0.000	0.070	0.070
Loyalty → Retention	0.097	0.000	0.097

Figure 5.5 Research Stage One Structural Model



Note: We used a bootstrapping routine (Hair, et al., 2017) with 5000 sub-samples, and a no sign change option to determine the significance of the path coefficients.

5.8 Discussion

Research Stage One developed and tested measurement and structural models to address the research question: how effective are current conceptualisations of service quality and loyalty for explaining member retention in a fitness facility context? The findings and implications from Research Stage One are presented next. *Firstly*, a short review of this stage is presented. *Secondly*, structural model results are discussed in relation to research hypotheses. *Finally*, outcomes are dissected to extract and support contributions to sport and leisure management, as well as to discuss how findings inform subsequent research stages. While specific results corresponding to Research Stage One are discussed next, a detailed synthesis of all discussion follows in later chapters.

5.8.1 Research Stage One: Overview

Research Stage One examined customer service quality perceptions and attitudes through an existing conceptualisation, to improve understanding of member retention. Specifically, the Howat and Assaker (2016) model was replicated. This model leveraged widely accepted frameworks that investigate service quality, satisfaction, and loyalty in sport and recreation contexts (Alexandris & Paliatia, 1999; Brady, et al., 2006; Clemes, et al., 2011; Murray & Howat, 2002; Theodorakis, et al., 2014). Through replication, a two-stage analysis, including Confirmatory Factor Analysis (CFA) and a Partial Least Squares Structural Equation Model (PLS-SEM), was undertaken. These methods tested hypothesised relationships and supported the reliability and validity of first- and second-order dimensions.

In sum, findings replicated those of Howat and Assaker (2016), validating four lower-order process quality and four lower-order outcome quality dimensions specific to the Fitness Industry. Analysis also examined the relative impact of higher-order process quality and

outcome quality dimensions, as well as value, as antecedents of satisfaction, loyalty, and finally, retention. As a primary and unique contribution, findings failed to support the relationship between loyalty and member retention in this stage. A discussion of relationships is presented next, aligned with research hypotheses from Research Stage One.

5.8.2 Research Stage One: Hypothesis Testing

A number of valuable relationships were determined through examination of the Research Stage One structural model (Figure 5.5). Specifically, a significant relationship between process quality and satisfaction (H1) was established. Similar support was shown for the relationship between satisfaction and loyalty (H3). However, results did not support a significant relationship between outcome quality and satisfaction (H2), or between loyalty and member retention (H4). These hypothesised relationships are presented in Table 5.22, and are discussed next.

Table 5.22 Research Stage One Hypothesis Testing

	Relationships	Path Coefficient	T Statistic	P Value	Bias Corrected 95% CI	f ²	Q ²	Decision
H1	Process Quality → Satisfaction	0.475	7.985	0.000	[0.350; 0.583]	0.296	0.285	Support
H2	Outcome Quality → Satisfaction	0.057 <i>ns</i>	1.693	0.091	[-0.011; 0.120]	0.006	-0.008	Reject
H3	Satisfaction → Loyalty	0.719	17.104	0.000	[0.625; 0.788]	1.072	0.194	Support
H4	Loyalty → Retention	0.097 <i>ns</i>	1.901	0.057	[0.004; 0.203]	0.010	0.006	Reject

Note: *ns* refers to non-significant effects at the 0.05 level. All other effects significant at $p < 0.05$.

R^2 (Value = 0.362; Satisfaction = 0.536; Loyalty = 0.517; Retention = 0.010). Effect size impact indicators are according to Cohen (1988), f^2 values: 0.35 (large), 0.15 (medium), 0.02 (small). Q^2 (Value = 0.355; Satisfaction = 0.520; Loyalty = 0.511; Retention = 0.005); Predictive relevance (q^2) of Predictor Exogenous Latent Variables as according to Henseler, et al. (2009), q^2 values: 0.35 (large), 0.15 (medium), and 0.02 (small).

H1: Process quality has a direct, positive effect on overall satisfaction.

Hypothesis 1 proposed a direct, positive effect of process quality on satisfaction. A positive path coefficient of 0.475 was determined, supported by a p-value of 0.000 and medium effect size of 0.296. Hypothesis 1 is therefore supported. Research Stage One consequentially suggests that member process quality perceptions in a fitness facility context directly contribute to member satisfaction perceptions.

H2: Outcome quality has a direct, positive effect on overall satisfaction.

Hypothesis 2 proposed a direct, positive effect of outcome quality on satisfaction. The structural model demonstrated a non-significant path coefficient of 0.057 and p-value of 0.091 for this relationship. These metrics were reinforced by a non-significant effect size of 0.006. Hypothesis 2 is therefore rejected. Findings suggest that outcome quality perceptions do not directly contribute to member satisfaction perceptions.

H3: Overall satisfaction has a direct, positive effect on loyalty.

Hypothesis 3 proposed a direct, positive effect of satisfaction on loyalty. A strong, positive path coefficient of 0.719 was determined for the relationship, supported by a p-value of 0.000, and a large effect size of 1.072. These results support that member satisfaction directly contributes to loyalty in a fitness facility context. Hypothesis 3 is therefore supported, with results suggesting satisfaction is a significant determinant of loyalty.

H4: Loyalty has a direct, positive effect on member retention.

Hypothesis 4 proposed a direct, positive relationship between loyalty and member retention. Results of the structural model demonstrated a non-significant relationship, reinforced through a path coefficient of 0.097, p-value of 0.057, and non-significant effect of 0.010. Further research is necessary to examine the feasibility of loyalty as an antecedent to the loyalty outcome, member retention.

5.8.3 Research Stage One: Discussion

Research Stage One investigated RQ1; *How effective are current conceptualisations of service quality and loyalty for explaining member retention in a fitness facility context?*

While this is evaluated through the four hypotheses addressed in Section 5.8.2, a discussion of the broader implications of findings is necessary. Key findings and corresponding implications are discussed individually in the following sections: Process Quality (Section 5.8.3.1), Outcome Quality (Section 5.8.3.2), Loyalty (Section 5.8.3.3), and Member Retention (Section 5.8.3.4).

5.8.3.1 Process Quality

The role of process quality was evaluated within Research Stage One, and was conceptualised in line with Howat and Assaker (2016). This framework modelled process quality and outcome quality as distinct constructs of service quality. Assessment of process

quality supported a significant relationship with satisfaction, as well as an indirect relationship with loyalty and member retention. Support for the role of process quality as a direct determinant of satisfaction was akin to previous sport and leisure research (e.g. Alexandris, et al., 2004; Bodet, 2008; Howat & Assaker, 2013; 2016; Murray & Howat, 2002; Nuviala, et al., 2012). This relationship poses that an increase in member perception of process quality will drive an increase in fitness facility satisfaction. Further, the higher-order process quality construct was supported as an antecedent of both loyalty and member retention, mediated by satisfaction. The mediator role of satisfaction corresponded with Howat and Assaker (2016). Emerging indirect relationships supported the need to improve process quality in order to adequately develop and explain member loyalty and retention in a fitness facility context. However, while the utility of process quality for indirectly explaining member loyalty and member retention was noteworthy, overall, empirical results did not support modelled constructs as significantly explaining member retention. Therefore, subsequent research stages are positioned to further investigate member retention and its determinants in a fitness facility context in order to derive meaningful implications specific to retention behaviour.

In addition, through replication of Howat and Assaker's (2016) conceptualisation, the relative impact of the higher-order process quality construct was validated in a fitness facility context. Findings supported four lower-order dimensions within the hierarchical, multi-dimensional model as contributing significantly to the process quality construct. Specifically, the utility of lower-order process quality dimensions – facility presentation, core services, staff, and parking – was supported in line with previous research (Howat & Assaker, 2016). Further derivation depicted lower-order dimensions – core services and staff – as exhibiting the strongest influence on the higher-order process quality construct. Overall, support for the role of lower-order dimensions, and corresponding sub-dimensions, poses implications for

intervention design. Findings suggest that fitness facility members form part of their overall evaluation of service quality based on how they assess lower-order process quality dimensions, and the corresponding attributes representing those dimensions. Validation of the process quality construct affirmed the role of tangible and intangible service touchpoints in a fitness facility context. The use of this conceptualisation was justified and was retained for subsequent research stages.

Overall, the process quality construct was supported as a significant determinant of satisfaction, and as indirectly related to loyalty and member retention. Findings provided validation of lower-order process quality dimensions, parallel to past research (Howat & Assaker, 2016), and provided impetus to the assessment of process quality and member retention in subsequent research stages.

5.8.3.2 Outcome Quality

As with process quality, the role of outcome quality was evaluated within Research Stage One, and was conceptualised in line with that proposed by Howat and Assaker (2016). Despite support for the role of outcome quality as a discrete construct of service quality, Research Stage One did not support a significant relationship between outcome quality and satisfaction. Findings proposed that benefits received as a result of service engagement (*outcome quality*) were not influential in the development of satisfaction in a fitness facility context. An inability to support the role of outcome quality for explaining satisfaction provides impetus for subsequent research stages. Specifically, the view that outcome quality perception is developed over multiple service encounters advocates a review of satisfaction measurement. As outcome quality is considered to be less influenced by high-emotion single events (Alexandris, et al., 2004; Howat, et al., 2008; Howat, et al., 2005), researchers proposed that a wider capture of satisfaction may be necessary to improve understanding of

the relationship between outcome quality and satisfaction. Movement to a multi-item satisfaction scale in subsequent research stages is intended to improve the measured points of discrimination and to enhance understanding of the role of outcome quality in explaining satisfaction. In sum, a non-significant relationship between outcome quality and satisfaction opposes that proposed by Howat and Assaker (2016) and emphasises the need to further investigate the utility of outcome quality in a fitness facility context.

Evaluation of the lower-order dimensions of outcome quality yielded similar results to that of process quality, with findings aligned with Howat and Assaker's (2016) conceptualisation. Specifically, lower-order dimensions previously identified by Howat and Assaker (2016) – competition success, social connection, health and fitness, and relaxation and stress release – contributed significantly to the outcome quality construct. An interesting distinction between the relative significance of lower-order dimensions was made, in that health and fitness and stress release and relaxation had the highest measured loading on outcome quality. This differs from Howat and Assaker (2016) who proposed health and fitness and social connection had the strongest bearing on perceived outcome quality. Despite this nuance, the findings clearly indicated that fitness facility members form part of their overall evaluation of service quality based on how they assess lower-order outcome quality dimensions and the corresponding attributes representing those dimensions. Validation of the outcome quality construct informs research, supporting the continuing use of the multi-dimensional conceptualisation of service quality in subsequent research stages.

Overall, the outcome quality construct was not supported as a significant determinant of satisfaction within Research Stage One and suggests further empirical investigation is necessary. Findings provided validation of lower-order outcome quality dimensions, akin to

that supported within past research (Howat & Assaker, 2016), and provided impetus for the assessment of outcome quality in subsequent research stages.

5.8.3.3 Loyalty

Loyalty and its determinants were conceptualised in line Howat and Assaker (2016) and were evaluated in Research Stage One. Findings supported the role of satisfaction as a direct determinant of loyalty (e.g. Clemes, et al., 2011; Cronin, et al., 2000; Dagger, et al., 2007; Howat & Assaker, 2016; Parasuraman, et al., 1988). This relationship affirms the inextricable link between satisfaction and loyalty in a fitness facility context. In addition, improved understanding was derived for the roles of process quality, outcome quality, and value for explaining loyalty, mediated by satisfaction. These indirect relationships propose that consideration must be made to service quality dimensions, value, and satisfaction to adequately develop and explain member loyalty. In sum, replication contextually validated the direct role of satisfaction as a critical driver of loyalty, as well as subsequent indirect relationships that shape the development of loyalty in a fitness facility context.

Further, while the support of member loyalty determinants is useful, a one-dimensional view of loyalty restricts derivation of practical implications. Replication permitted assessment of a one-dimensional loyalty construct, determined as favourable attitudes held by customers towards a fitness facility. Specifically, Howat and Assaker's (2016) definition of loyalty does not differentiate between attitudinal and behavioural loyalty intentions. Therefore, interpretation of loyalty determinants and interventions may be misleading. This nuance is aligned with previous research that contended a one-dimensional view as inadequately capturing the loyalty concept (Dick & Basu, 1994; Doyle, et al., 2013; Keller & Lehmann, 2006; Li & Petrick, 2010; Oliver, 1997). While subsequent research

stages maintain intention to recommend as a self-report measure of attitudinal loyalty, distinction is proposed to enable greater emphasis on behavioural intentions.

Overall, Research Stage One assisted in developing an understanding of the antecedents of loyalty in a fitness facility context. Limitations of Howat and Assaker's (2016) measurement of loyalty were presented and informed subsequent research stages that sought to enhance the distinct conceptualisation of the loyalty construct.

5.8.3.4 Member Retention

Replication of Howat and Assaker's (2016) model yielded limited explanatory power and failed to support the ability of hypothesised constructs to explain member retention. In total, modelled constructs explained only 1% of the total variance in member retention. The discovery of a lack of explanatory power is a valuable initial contribution of this research and provides stimulus to build on the Howat and Assaker (2016) framework that culminated in the measurement of loyalty (but not subsequent behaviours). In this research stage, the replicated framework provided little value in explaining retention behaviour.

Assessing direct relationships, a non-significant relationship was determined between the one-dimensional conceptualisation of loyalty and member retention. Inability to support this relationship questions the utility of loyalty as it has been measured. Specifically, the value derived from measurement loyalty is presented only *if* prediction of behaviour ensues (East et al., 2005). Therefore, Research Stage One findings aligned with recent work emerging within the wider sport and leisure setting suggesting that loyalty indicators can be poor predictors of actual behaviour (Alexandris, et al., 2001; Baker, et al., 2018; Zaharia, et al., 2016). In sum, while the Howat and Assaker (2016) framework is useful to delineate loyalty, it fails to significantly explain member retention, as a loyalty outcome in a fitness facility context. Ineffective delineation of member retention limits the practicality of the

Howat and Assaker (2016) framework, where financial viability largely relies on the revenue provided by membership fees.

Overall, despite support for modelled constructs as valid and reliable measurements of satisfaction and loyalty, the inability of the Research Stage One framework to predict member retention revealed insufficiencies. These findings provided impetus for subsequent research stages, which intend to extend beyond the use of loyalty and other attitudes as antecedents and to improve the ability for modelled constructs to explain member retention.

5.9 Chapter Summary

Research Stage One detailed the measurement of core constructs and explored relationships between them. Reliability and validity testing determined the suitability of constructs for inclusion in the structural model. The structural model was presented in Figure 5.5, and discussed in Section 5.8.

In sum, a number of findings within Research Stage One contributed towards answering the overarching research question: *How effective are current conceptualisations of service quality and loyalty for explaining member retention in a fitness facility context?* Replication of Howat and Assaker's (2016) constructs enabled evaluation of a number of attitudes and perceptions relating to membership engagement. Findings supported the significant role of process quality in explaining satisfaction (H1), and satisfaction in explaining member loyalty (H3). Additionally, a non-significant relationship between outcome quality and satisfaction (H2) informs subsequent research. Finally, while the framework culminated in a valid and reliable measure for loyalty, a one-dimensional view of loyalty was inadequate to explain member retention behaviour. This was evident through a

non-significant relationship between loyalty and member retention (H4). These results provided impetus to improve conceptualisation within subsequent research stages.

CHAPTER 6: DATA ANALYSIS – RESEARCH STAGE TWO

6.1 Introduction

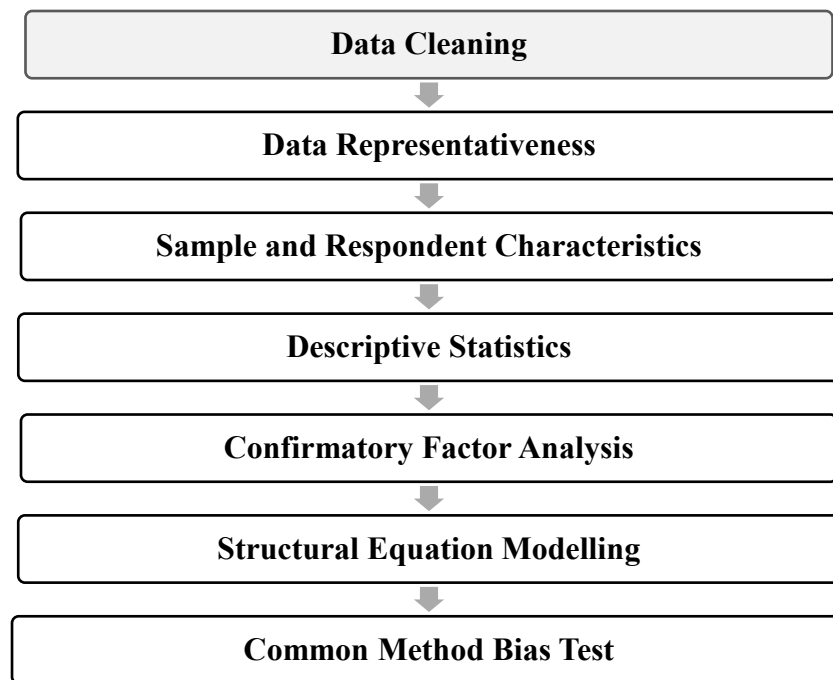
This chapter presents data analysis corresponding to Research Stage Two. Extending the existing framework of Howat and Assaker (2016), this stage sought to integrate Social Cognitive Theory (SCT) into the model in order to produce a more holistic and meaningful view of the reciprocal interactions between individual, environmental, and behavioural influences. Such extensions will allow researchers to test the ability of constructs to explain member retention. Specifically, Research Stage Two examined the capacity for self-efficacy, self-reported attendance behaviour, and a multi-dimensional view of loyalty to enhance explanation of member retention. Addressing RQ2 (H5 – H14), Research Stage Two examined the relationships between process quality, outcome quality, value, satisfaction, self-efficacy, self-reported attendance behaviour, attitudinal loyalty, behavioural loyalty, and member retention in an Australian fitness facility context. The research question and hypotheses associated with Research Stage Two are summarised in Table 6.1.

Table 6.1 Research Stage Two Summary

Research Question	Hypothesis
<p>RQ2: How do self-efficacy, self-reported attendance behaviour, and multi-dimensional loyalty enhance the explanation of member retention in a fitness facility context?</p>	<p>H5: Process quality has a direct, positive effect on self-efficacy. H6: Outcome quality has a direct, positive effect on self-efficacy. H7: Overall satisfaction has a direct, positive effect on attitudinal loyalty. H8: Overall satisfaction has a direct, positive effect on behavioural loyalty. H9: Self-efficacy has a direct, positive effect on self-reported attendance behaviour. H10: Self-reported attendance behaviour has a direct, positive effect on attitudinal loyalty. H11: Self-reported attendance behaviour has a direct, positive effect on behavioural loyalty. H12: Self-reported attendance behaviour has a direct, positive effect on member retention. H13: Attitudinal loyalty has a direct, positive effect on member retention. H14: Behavioural loyalty has a direct, positive effect on member retention.</p>

Research Stage Two consisted of a second online questionnaire disseminated to members of a designated fitness facility and managed by the partner organisation. A summary of Stage Two data analysis is provided in Figure 6.1.

Figure 6.1 Summary of Research Stage Two Data Analysis



6.2 Data Cleaning

The Research Stage Two questionnaire was sent to a membership email list of 4,144 recipients by the partner organisation. From this, 3,589 were successfully delivered (89.8%), and 1,821 recipients opened the email (43.9%). Of these, 1,016 clicked through to view the questionnaire (24.5%). From the membership list of 4,144 potential respondents, a total of 696 questionnaire responses were received. After data cleaning, 661 submissions remained, representing a 16% response rate of those invited to participate. This was slightly higher than that of Research Stage One, which saw a 14.4% response rate.

As with Research Stage One, the number of scale items necessitated data cleaning. This process saw 17 responses removed due to incomplete member data, largely as a result of missing the relevant member number. Duplicate submissions led to the removal of 16 responses. A summary of the data cleaning completed as part of Research Stage Two is presented in Table 6.2.

Table 6.2 Research Stage Two Data Cleaning Summary

Data Collection Site	Total Submissions	Removed as Incomplete	Removed as Duplicate	Removed as Outlier	Total Usable Submissions
Partnered Organisation Fitness Facility Members	696	17	16	2	661

6.3 Data Representativeness

The extent that sample data is representative of the population is an important consideration where statistical inference is intended. Use of an enhanced online questionnaire provided each member of the population opportunity to participate. Evaluation of sample representativeness is outlined below.

Table 6.3 evaluates the gender ratio of the sample and population data for Research Stage Two. Corresponding with Research Stage One, results indicated a higher response rate of females compared to males. Furthermore, a higher percentage of female respondents were reported in the sample than in the target population. These results posed some risk of gender imbalance, supported within previous research for the determinants of customer satisfaction (McIntyre, et al., 2003), and perceptions of service fairness (Snipes, et al., 2006). To control for potential bias from the sample imbalance, gender was considered as a control variable within the structural model for Research Stage Two. These results are presented in Section 6.7.4.

Table 6.3 Research Stage Two Gender Representativeness

Gender	Total Members	Percentage Members	Total Questionnaire	Percentage Questionnaire	Difference
Male	1803	43.5%	222	33.5%	-10%
Female	2332	56.3%	436	66%	+9.7%
Other	9	0.2%	3	0.5%	+0.3%
Total	4144	-	661	-	

Table 6.4 presents class-balance statistics with regards to respondent membership type. This table can be interpreted in an analogous manner to that found in Section 5.3. As outlined, the age requirement of participation restricted representation of Teen Membership holders in the current context. This restriction was evident through the over-representation of Complete Membership holders within the sample, in comparison with the population. Besides the issues of Teen Membership (and the consequent overweighting of Complete Membership), Table 6.4 indicates that Research Stage Two participants were otherwise a representative sample from which to contrast customer attitudes and perceptions towards fitness facility engagement.

Table 6.4 Research Stage Two Membership Type Representativeness

Membership Type	Total Members	Percentage Members	Total Questionnaire	Percentage Questionnaire	Difference
Complete Membership	3350	80.8%	602	90.9%	+10.1%
Aquatic Membership	292	7%	57	8.6%	+1.6%
Teen Membership	377	9.1%	2	0.3%	-8.8%
Other	125	3%	0	0%	-3%
Total	4144	-	661	-	

6.4 Sample and Respondent Characteristics

Respondents (n=661) of the Research Stage Two questionnaire were members of a designated full-service fitness facility located in a one of the five major Australian cities. A demographic breakdown of Research Stage Two participants is presented in Table 6.5. Key

characteristics include gender, age, membership type, membership length, and distance travelled to attend. A brief description of respondent characteristics is provided next.

First, evaluating the gender distribution saw 66% of the sample represented as female and 34% represented as male. As depicted in Section 6.3, a higher percentage of female respondents in comparison with the target population data is significant where statistical inference is intended. *Second*, a reasonably consistent percentage of respondents were reported to belonged to each distinct age category. The smallest represented age category was those aged between 18 and 24 years (5.1%). The highest represented age category was those aged between 45 and 54 years of age (24%). *Third*, 40.9% of respondents indicated membership length greater than two years. In sum, gender, age, and membership length was largely reflective of that found in Research Stage One. This reflection indicated consistency of sample characteristics across stages of data collection. *Finally*, a new characteristic, ‘distance travelled to attend’, was sought in Research Stage Two. Evaluation of distance travelled saw that 61% of respondents live within 5km of the designated fitness facility. Proximity is important for consideration in this context where we examine exercise behaviour facilitation and maintenance.

Table 6.5 Research Stage Two Participant Characteristics

Variables		N	Percentage
Gender	Female	437	66.0%
	Male	222	33.5%
	Prefer Not to Say	1	0.2%
	Other	2	0.3%
Age	18–24	34	5.1%
	25–34	71	10.7%
	35–44	117	17.7%
	45–54	158	23.9%
	55–64	142	21.5%
	65 and above	140	21.1%
Membership Type	Complete Membership	602	90.9%
	Aquatic Membership	58	8.8%
	Teen Membership	2	0.3%
Membership Length	Less than three months	69	10.4%
	Between three months and six months	70	10.6%
	Six months to one year	153	23.1%
	Between one year and two years	99	15.0%
	Between two years and five years	82	12.4%
	Between five years and ten years	81	12.2%
	More than ten years	108	16.3%
Distance Travelled	Less Than 5km	403	60.9%
	5km–10km	190	28.7%
	10km–15km	43	6.5%
	15km–20km	15	2.3%
	More than 20km	11	1.7%

6.5 Descriptive Statistics

Despite the robustness of PLS-SEM when working with non-normal data (Hair, et al., 2012; Hair, et al., 2014b), collected data was nonetheless examined for distribution issues of skewness and kurtosis. The relaxed normality assumptions of PLS-SEM implied that high levels of skewness and kurtosis within Research Stage Two did not necessitate item removal.

Research Stage Two items showed skewness of between -4.485 and +0.723 and kurtosis between -1.029 and +21.122. Non-normal distribution was observed for three behavioural intention items (BI3, BI4 and BI5). These items were not based on *a priori* research and were developed in an exploratory manner for this research. While not problematic given the large sample size ($n > 300$), and the use of PLS-SEM as a statistical technique (Hair, et al., 2012; Hair, et al., 2014b), the skewness and kurtosis of these items was taken into consideration throughout data analysis. As a result, BI3 and BI4 were removed from the measurement model. Conversely, BI5 was maintained due to its relationship with attitudinal loyalty. In this case, high skewness and kurtosis was considered as a limitation of research. In addition, item PQ11 failed to adhere to less stringent acceptance criteria for skewness and kurtosis. Despite this, formative indicators are not interchangeable (Sarstedt, et al., 2014), and therefore PQ11 was maintained to fully capture the intended construct, as per Howat and Assaker (2016).

Taking into consideration the above, remaining items adhered to the conservative acceptance criteria of ± 3 for skewness, and ± 5 for kurtosis. Furthermore, with 10 exceptions, items adhered to the more stringent skewness and kurtosis range of ± 2 . In total, 71% of items fell within ± 2 , emphasised as a more stringent range of skewness and kurtosis, with 98% of items falling within the conservative range of ± 3 for skewness, and ± 5 for kurtosis. This adherence was significantly improved, with 23% more items adhering to stringent ranges of

skewness and kurtosis, compared to Research Stage One (Section 5.5). Table 6.6 shows the skewness and kurtosis for each questionnaire item assessed within Research Stage Two.

While PLS-SEM results were robust to high levels of skewness and measurement of formative constructs (Cassel, et al., 1999; Hair, et al., 2012; Reinartz, et al., 2009), consideration of data normality is nonetheless necessary. As a result of the use of PLS-SEM, and the existence of non-normal data, the current research adopted bootstrapping to determine the level of significance of each indicator weight. This analysis was conducted for the structural model presented in Section 6.7.4. The researchers noted skewness and kurtosis for some items maintained in the structural model and acknowledge the limitation that highly skewed data may inflate bootstrap errors (Chernick, 2008; Hair, et al., 2012).

Table 6.6 Research Stage Two Skewness and Kurtosis

Questionnaire Item Label	N	Mean	Skewness	Kurtosis
PB7	661	4.24	0.565	0.719
SE1	661	5.82	-1.494	1.439
SE2	661	5.48	-1.142	0.615
SE3	661	5.15	-0.820	-0.352
OQ1	661	2.92	0.523	-0.979
OQ2	661	2.75	0.672	-0.664
OQ3	661	2.70	0.723	-0.565
OQ4	661	3.51	0.190	-1.005
OQ5	661	3.63	0.120	-1.029
OQ6	661	6.07	-1.539	3.186
OQ7	661	6.09	-1.579	3.382
OQ8	661	5.89	-1.468	2.325
OQ9	661	5.13	-0.842	-0.136
OQ10	661	5.16	-0.835	0.049
OQ11	661	5.46	-1.056	0.587
PQ1	661	5.55	-1.216	1.544
PQ2	661	5.69	-1.251	1.700
PQ3	661	5.73	-1.305	1.919
PQ4	661	5.51	-0.980	0.936
PQ5	661	5.71	-1.269	1.878
PQ6	661	5.78	-1.301	2.002
PQ7	661	5.71	-1.070	1.080
PQ8	661	5.63	-1.194	1.580
PQ9	661	6.13	-1.775	4.052
PQ10	661	6.03	-1.702	3.282
PQ11	661	6.33	-2.281	7.812
PQ12	661	5.93	-1.336	1.978
PQ13	661	5.30	-0.939	0.399
PQ14	661	4.70	-0.567	-0.809
SAT1	661	5.47	-1.065	1.413
SAT2	661	5.35	-0.872	0.627
SAT3	661	5.57	-1.065	1.363
SAT4	661	4.87	-0.644	-0.495
VALUE1	661	5.60	-1.132	1.042
VALUE2	661	5.54	-1.008	0.738
BI1	661	8.40	-1.375	2.872
BI2	661	8.42	-1.730	3.277
BI3	661	9.14	-3.191	9.610
BI4	661	9.52	-4.485	21.122
BI5	661	9.37	-3.610	14.365
BI6	661	8.74	-2.216	4.699
BI7	661	8.65	-1.861	4.431

6.6 Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) intended to statistically confirm the suitability of the proposed model and evaluate model fit (Hair, et al., 2014a). Additionally, the CFA aimed to assess the measurement properties through reliability and validity testing (Hair, et al., 2006). CFA was undertaken to develop measurement models distinctly for Process Quality (Section 6.6.1), Outcome Quality (Section 6.6.2), and Latent and Observed Constructs (Section 6.6.3). This was due to the presence of formative and reflective constructs. Measurement models were constructed using AMOS (v26); the results are presented next.

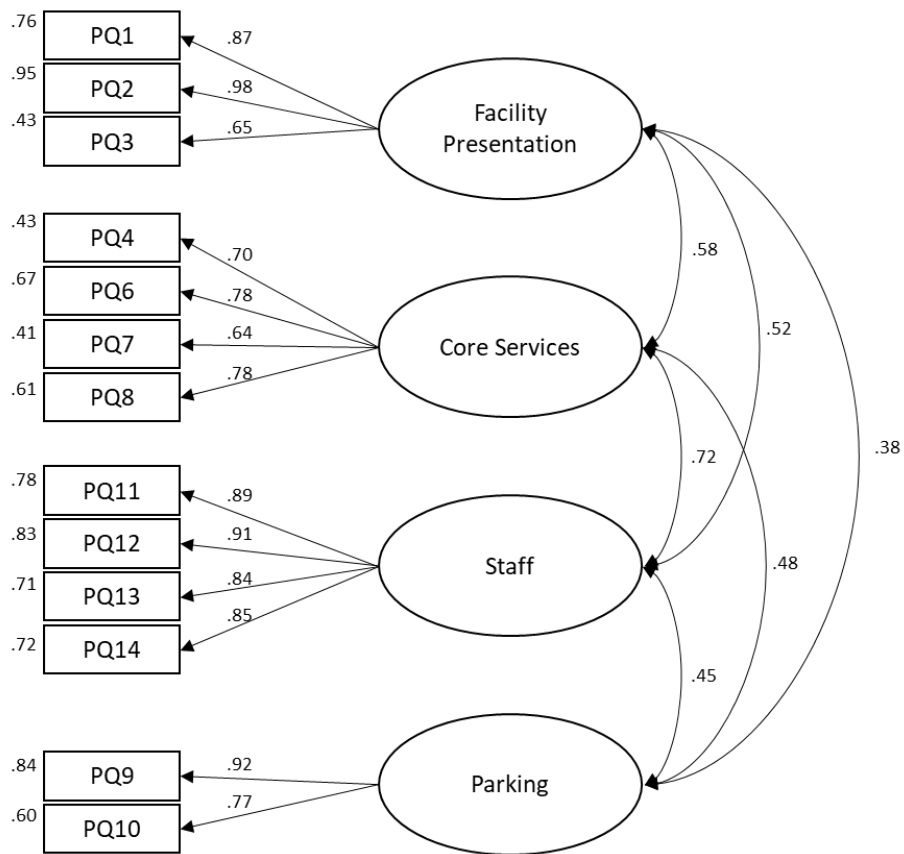
6.6.1 Process Quality

The process quality measurement model comprised four lower-order dimensions replicated from Howat and Assaker (2016): facility presentation, core services, staff, and parking. These lower-order dimensions were tested for reliability and validity in Research Stage One, returning direct positive results. A second data collection necessitated a second CFA of the process quality construct. This process demonstrated cross-loading of item PQ5. As a result, this item was removed from the measurement model construct. The final measurement model for process quality is presented in Figure 6.2, while Table 6.7 details the goodness of fit results. As with Research Stage One, results showed model fit measures as adhering to cut-off points with the exception of the RMR and RMSEA. However, inclusion of reflective constructs within the PLS-SEM deem goodness of fit measures as conceptually inappropriate (Hair, et al., 2012), and therefore the construct was maintained for subsequent analysis.

Table 6.7 Fit Measures: Process Quality

Process Quality (n=661)	CMIN	DF	CMIN/DF	RMR	RMSEA	GFI	TLI	CFI
Research Stage Two	317.163	59	5.376	0.100	0.081	0.934	0.940	0.954

Figure 6.2 Measurement Model: Process Quality



Cronbach's Alpha measured the internal consistency of the scale. Results presented in Table 6.8 indicate high internal consistency, with Cronbach's Alpha values between 0.817 and 0.924. Additionally, item-to-total correlations provided evidence of internal consistency, ranging between from 0.587 to 0.859. Overall, results indicated reliability, following the removal of PQ5 as a result of cross-loading.

Table 6.8 Internal Consistency: Process Quality

Scale Items (n=661)	Items	Item-to-Total Correlation	Means	Standard Deviation
Facility Presentation $\alpha= 0.861$	PQ1	0.769	5.55	1.320
	PQ2	0.850	5.69	1.243
	PQ3	0.607	5.73	1.241
Core Services $\alpha= 0.857$	PQ4	0.643	5.51	1.315
	PQ6	0.724	5.78	1.215
	PQ7	0.587	5.71	1.261
	PQ8	0.706	5.63	1.285
Staff $\alpha= 0.924$	PQ9	0.850	6.13	1.093
	PQ10	0.859	6.03	1.201
	PQ11	0.799	6.33	.935
	PQ12	0.808	5.93	1.161
Parking $\alpha= 0.817$	PQ13	0.707	5.30	1.512
	PQ14	0.707	4.70	1.887

Validity was evaluated through Critical Ratio (CR) and Average Variance Extracted (AVE). For lower-order process quality dimensions, CR values ranged from 0.830 and 0.927, exceeding the threshold suggested by Hair et al. (2010). In addition, AVE values were acceptable in line with Section 4.8.2, ranging from 0.545 to 0.761. These results supported inter-construct validity of the process quality dimensions. Concluding the process quality construct CFA, four lower-order dimensions were supported for inclusion in the structural model for Research Stage Two: facility presentation, core services, staff, and parking.

Table 6.9 Convergent Validity: Process Quality

	CR	AVE	MSV	Max R(H)	Staff	Facility Presentation	Core Services	Parking
Staff	0.927	0.761	0.518	0.931	0.872			
Facility Presentation	0.878	0.711	0.342	0.966	0.519	0.843		
Core Services	0.826	0.545	0.518	0.840	0.720	0.585	0.738	
Parking	0.834	0.716	0.235	0.868	0.448	0.381	0.485	0.846

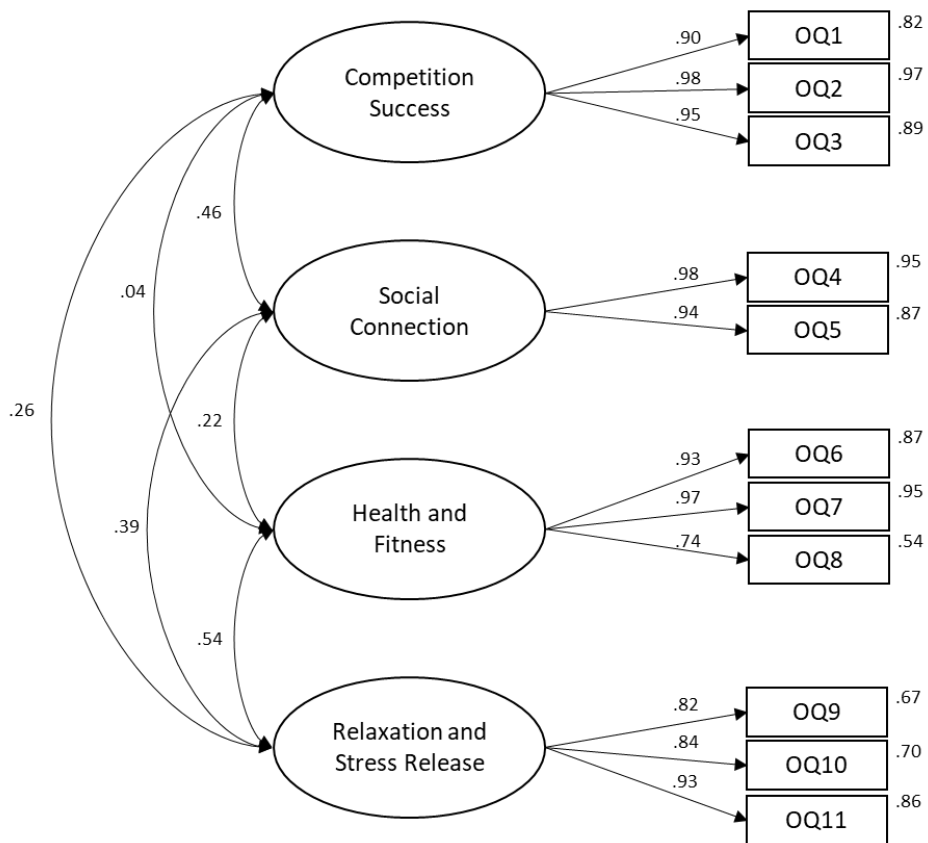
6.6.2 Outcome Quality

A CFA in Research Stage One assessed four lower-order outcome quality dimensions, returning positive results. A second data collection necessitated a second CFA of the outcome quality construct. The resulting analysis depicts four lower-order dimensions comprising the outcome quality construct: competition success, social connection, health and fitness, and relaxation and stress release. The measurement model output developed for the outcome quality concept is presented in Figure 6.3, and corresponding goodness of fit results are shown in Table 6.10. As with Research Stage One, results showed model fit measures as adhering to cut-off points with the exception of the RMR and RMSEA. However, inclusion of reflective constructs within the PLS-SEM deem goodness of fit measures as conceptually inappropriate (Hair, et al., 2012), and therefore the construct was maintained for subsequent analysis.

Table 6.10 Fit Measures: Outcome Quality

Outcome Quality (n=661)	CMIN	DF	CMIN/DF	RMR	RMSEA	GFI	TLI	CFI
Research Stage Two	372.532	38	9.803	0.162	0.115	0.918	0.933	0.953

Figure 6.3 Measurement Model: Outcome Quality



The current research evaluated scale reliability through Cronbach's Alpha, as well as item-to-total correlations. Assessment of Cronbach's Alpha is presented in Table 6.11, and shows values between 0.892 and 0.960. These values were considered acceptable and suggested high internal consistency of data. Additionally, the values of item-to-total correlations for outcome quality items were acceptable, ranging between from 0.708 to 0.943.

Table 6.11 Internal Consistency: Outcome Quality

Scale Items (n=661)	Items	Item-to-Total Correlation	Means	Standard Deviation
Competition Success $\alpha= 0.960$	OQ1	0.887	2.92	1.902
	OQ2	0.943	2.75	1.821
	OQ3	0.917	2.70	1.800
Social Connection $\alpha= 0.955$	OQ4	0.914	3.51	1.880
	OQ5	0.914	3.63	1.893
Health and Fitness $\alpha= 0.900$	OQ6	0.844	6.07	1.073
	OQ7	0.880	6.09	1.065
	OQ8	0.708	5.89	1.275
Relaxation and Stress Release $\alpha= 0.892$	OQ9	0.765	5.13	1.709
	OQ10	0.772	5.16	1.582
	OQ11	0.835	5.46	1.505

High construct loadings, as well as significant Critical Ratio (CR) values ranging from 0.896 and 0.961, demonstrated convergent validity of the outcome quality construct. Critical Ratio (CR) values exceeded the threshold of >0.70 for all indicators, as outlined in Section 4.8.2. Additionally, the AVE values of outcome quality factors were shown as ranging from 0.741 to 0.914. These results are presented in Table 6.12, and satisfy the parameters suggested by Hair et al. (2010). To conclude, CFA of the outcome quality construct supported the inclusion of four lower-order dimensions – competition success, social connection, health and fitness, and relaxation and stress release – in the structural model.

Table 6.12 Convergent Validity: Outcome Quality

	CR	AVE	MSV	Max R(H)	Health and Fitness	Competition Success	Social Connection	Relaxation and Stress Release
Health and Fitness	0.917	0.790	0.289	0.965	0.889			
Competition Success	0.961	0.892	0.209	0.977	0.036	0.945		
Social Connection	0.955	0.914	0.209	0.965	0.220	0.457	0.956	
Relaxation and Stress Release	0.896	0.741	0.289	0.912	0.538	0.259	0.389	0.861

6.6.3 Latent and Observed Constructs

Throughout Research Stage Two a number of conceptual additions were proposed that affect latent and observed constructs. These additions include self-efficacy, self-reported attendance behaviour, and evaluation of multi-dimensional loyalty. In particular, the inclusion of self-efficacy and self-reported attendance behaviour intended to support the integration of an SCT understanding. This integration aimed to provide a better understanding of the reciprocal nature of individual, environmental, and behavioural influences, and the role of these in explaining member retention.

The loyalty concept proposed by Howat and Assaker (2016) was re-conceptualised as a multi-dimensional construct: attitudinal loyalty and behavioural loyalty. This conceptualisation evaluates the assertion that a one-dimensional view of loyalty is inadequate in capturing the loyalty concept, as well as depicting drop-out behaviour (Dick & Basu, 1994; Oliver, 1997). The questionnaire instrument scale developed for attitudinal and behavioural loyalty was not based on *a priori* research, and some scale items demonstrated skewness and kurtosis issues, as discussed in Section 6.5.

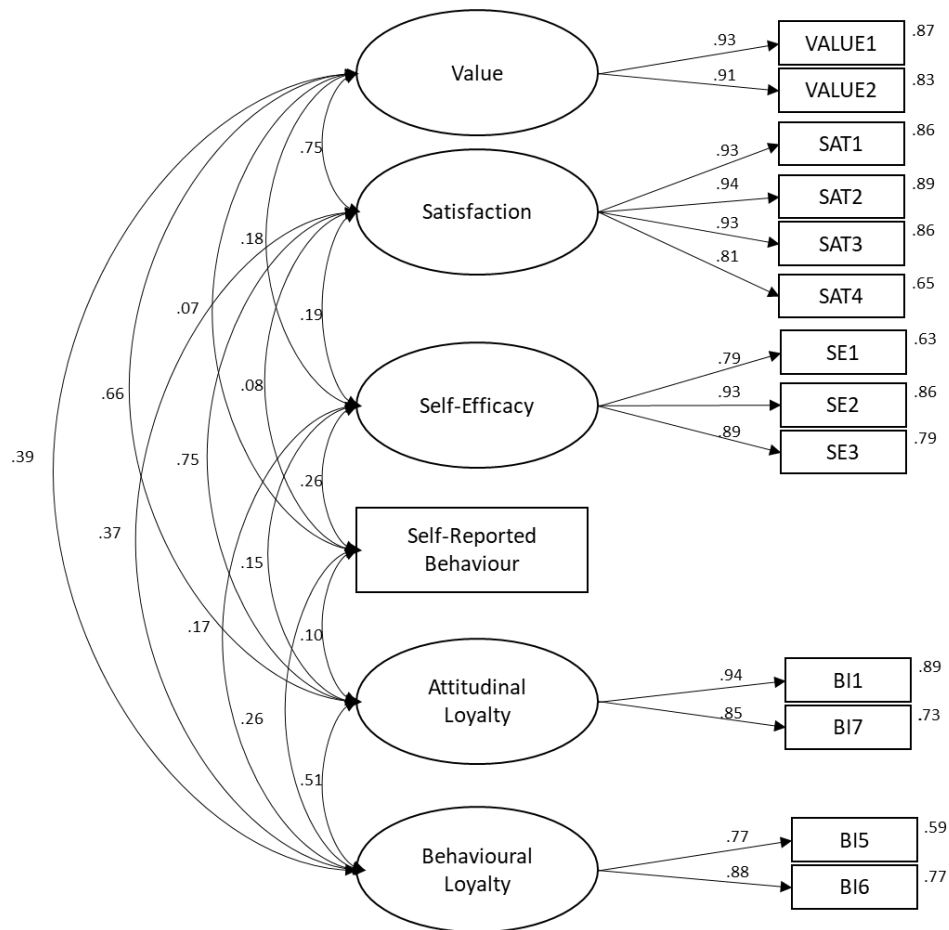
Research Stage Two latent and observed constructs included value, satisfaction, self-efficacy, self-reported attendance behaviour, attitudinal loyalty, and behavioural loyalty. The

corresponding measurement model is presented in Figure 6.4, with corresponding fit measures presented in Table 6.13 indicating a reasonable fit of latent and observed constructs.

Table 6.13 Fit Measures: Latent and Observed Constructs

Variables (n=661)	CMIN	DF	CMIN/DF	RMR	RMSEA	GFI	TLI	CFI
Research Stage Two	179.555	63	2.850	0.080	0.053	0.963	0.977	0.984

Figure 6.4 Measurement Model: Value, Satisfaction, Self-Efficacy, Self-Reported Behaviour, Attitudinal Loyalty and Behavioural Loyalty



As with each of the aforementioned measurement models, Cronbach's Alpha measured reliability. These results are presented in Table 6.14. Interpretation demonstrated Cronbach's Alpha values was acceptable and internally consistent, with values respectively:

0.921 for value, 0.934 for satisfaction, 0.901 for self-efficacy, 0.888 for attitudinal loyalty, and 0.784 for behavioural loyalty.

Table 6.14 Internal Consistency: Latent and Observed Constructs

Scale Items (n=661)	Items	Item-to-Total Correlation	Means	Standard Deviation
Value $\alpha= 0.921$	VALUE1	0.722	5.60	1.372
	VALUE2	0.711	5.54	1.372
Satisfaction $\alpha= 0.934$	SAT1	0.806	5.47	1.214
	SAT2	0.780	5.35	1.266
	SAT3	0.813	5.57	1.203
	SAT4	0.685	4.88	1.672
Self-Efficacy $\alpha= 0.901$	SE1	0.749	5.82	1.624
	SE2	0.851	5.48	1.644
	SE3	0.819	5.15	1.819
Attitudinal Loyalty $\alpha= 0.888$	BI1	0.802	8.40	1.599
	BI7	0.802	8.65	1.746
Behavioural Loyalty $\alpha= 0.784$	BI5	0.675	9.37	1.647
	BI6	0.675	8.74	2.230

As shown in Table 6.15, observed variable constructs were supported for convergent validity. This was evident whereby respective indicator loadings were high, and Critical Ratio (CR) values for all indicators ranged from 0.809 and 0.946. These values exceeded the thresholds outlined in Section 4.8.2. AVE, as a strict measure of convergent validity, was acceptable at the >0.5 range suggested by Hair et al, (2010), ranging from 0.680 to 0.854.

Table 6.15 Convergent Validity: Latent and Observed Constructs

	CR	AVE	MSV	Max R(H)	Self-Efficacy	Attitudinal Loyalty	Behavioural Loyalty	Satisfaction	Value
Self-Efficacy	0.904	0.759	0.037	0.921	0.871				
Attitudinal Loyalty	0.892	0.806	0.564	0.913	0.149	0.898			
Behavioural Loyalty	0.809	0.680	0.255	0.824	0.166	0.505	0.824		
Satisfaction	0.946	0.816	0.564	0.957	0.192	0.751	0.362	0.903	
Value	0.921	0.854	0.560	0.923	0.180	0.659	0.386	0.748	0.924

In summary, the CFA results for latent and observed constructs demonstrated the appropriateness of scale items for inclusion in the structural model. The presented CFA depicts a measurement model with corresponding goodness of fit indices that exceeded asserted thresholds and suggest that scale items are representative of related constructs.

6.7 Structural Equation Modelling

The above analysis supports the suitability of constructs for inclusion in the structural model. In order to conduct structural model analysis, PLS-SEM was implemented via the statistical software SmartPLS (Ringle, et al., 2015). The Research Stage Two structural model is presented in Figure 6.5, with results of this analysis discussed next.

6.7.1 Assessing Reflective Measurement Model Constructs

Evaluation of structural model reflective constructs was performed to ensure validity and reliability through an assessment of the following diagnostics: Cronbach's Alpha, Average Variance Extracted (AVE), Composite Reliability (CR), and Heterotrait-Monotrait (HTMT). These metrics are discussed below for Research Stage Two data, in line with thresholds proposed in Section 4.8.3.1.

Cronbach's Alpha was used to evaluate *internal consistency*. Results adhered to the threshold of above 0.70 indicated in Section 4.8.3.1. Reflective construct results saw Cronbach's Alpha values ranging from 0.806 – 0.961. The results are presented in Table 6.17, and supported the reliability of the structural model.

Convergent validity was assessed through an evaluation of Composite Reliability (CR) and the Average Variance Extracted (AVE). For reflective constructs, CR values ranged from 0.881 – 0.978, supporting the validity of the structural model. In addition, AVE interpretation determines the relationship between related constructs (Hair, et al., 2019). Findings supported reflective constructs as exceeding AVE acceptance thresholds proposed in Section 4.8.3.1, ranging from 0.650 – 0.957. Results are presented in Table 6.17, and supported convergent validity.

Finally, assessment of *discriminant validity* was undertaken through the Heterotrait-Monotrait ratio of correlations (HTMT), which served as a substitute for the Fornell-Larcker criterion (Fornell & Larcker, 1981), as it is a more robust measure of discriminant validity. Results indicated that reflective measures were acceptable, with results ranging from 0.068 – 0.798. Support for discriminant validity is presented, in sum, in Table 6.16.

Table 6.16 Research Stage Two Data HTMT

	Attitudinal Loyalty	Behavioural Loyalty	Outcome Quality	Process Quality	Retention	Satisfaction	Self- Efficacy	Self- Reported Behaviour	Value
Attitudinal Loyalty	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Behavioural Loyalty	0.448	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Outcome Quality	0.361	0.254	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Process Quality	0.611	0.298	0.441	0.000	0.000	0.000	0.000	0.000	0.000
Retention	0.125	0.314	0.071	0.095	0.000	0.000	0.000	0.000	0.000
Satisfaction	0.691	0.317	0.422	0.798	0.112	0.000	0.000	0.000	0.000
Self-Efficacy	0.158	0.168	0.484	0.215	0.078	0.184	0.000	0.000	0.000
Self-Reported Behaviour	0.111	0.236	0.300	0.121	0.181	0.072	0.268	0.000	0.000
Value	0.591	0.330	0.353	0.705	0.140	0.708	0.184	0.068	0.000

6.7.2 Assessing Formative Measurement Model Constructs

Formative structural model constructs were evaluated through an examination of indicator collinearity, statistical significance, and relevance of the indicator weights. Acceptance thresholds are presented in Section 4.8.3.1, with results depicted in Table 6.17.

To evaluate the *collinearity* of formative indicators, the Variance Inflation Factor (VIF) was used. Formative constructs, process quality and outcome quality, demonstrated acceptable VIF scores ranging between 1.265 and 2.076 (Table 6.17). These results indicated that there was no cause to be concerned with multicollinearity in our sample.

Bootstrapping was undertaken to evaluate *statistical significance* (Chin, 1998). The results indicated the presence of significant absolute contribution for all process quality and outcome quality measures. This is shown through the bootstrap-based empirical 95% confidence interval produced in Table 6.17.

Finally, the *relevance of indicator weights* was investigated. For both process quality and outcome quality the outer weights demonstrated a significant, but weak relationship with their corresponding construct. For process quality, outer weights were shown as 0.300 for facility presentation, 0.382 for core services, 0.343 for staff, and 0.229 for parking. Conversely, outcome quality construct outer weights were demonstrated as 0.078 for competition success, 0.227 for social connection, 0.557 for health and fitness, and 0.426 for relaxation and stress release.

Table 6.17 Research Stage Two PLS-SEM Measurement Model Results

Construct	Item						
Reflective Measures		Loading	Composite Reliability	AVE	Cronbach's α	Mean	Standard Deviation
Self-Efficacy	SE1	0.901	0.938	0.835	0.902	5.82	1.624
	SE2	0.928				5.48	1.644
	SE3	0.912				5.15	1.819
Satisfaction	SAT1	0.939**	0.960	0.858	0.945	5.47	1.22
	SAT2	0.953**				5.35	1.27
	SAT3	0.943**				5.57	1.20
	SAT4	0.869**				4.87	1.67
Value	VALUE1	0.964**	0.962	0.927	0.921	5.60	1.37
	VALUE2	0.962**				5.54	1.37
Attitudinal Loyalty	BI1	0.956**	0.948	0.900	0.890	8.40	1.60
	BI7	0.941**				9.14	2.20
Behavioural Loyalty	BI5	0.901**	0.911	0.837	0.806	8.74	2.23
	BI6	0.928**				8.65	1.75
Formative Measures		Outer Weight	VIF		Bias Corrected 95% CI	P Value	
Process Quality	Facility	0.300**	1.596		[0.273; 0.329]	0.000	
	Core	0.382**	2.076		[0.357; 0.415]	0.000	
	Staff	0.343**	1.897		[0.317; 0.370]	0.000	
	Parking	0.229**	1.263		[0.199; 0.259]	0.000	
Outcome Quality	Competition	0.078**	1.265		[-0.014; 0.155]	0.073	
	Social	0.227**	1.369		[0.160; 0.290]	0.000	
	Health and	0.557**	1.543		[0.495; 0.629]	0.000	
	Relaxation	0.426**	1.714		[0.379; 0.476]	0.000	

Lower Order (Reflective) Measures		Loading	Composite Reliability	AVE	Cronbach's α	Mean	Standard Deviation
Facility Presentation	PQ1	0.899**	0.916	0.786	0.861	5.55	1.320
	PQ2	0.940**				5.69	1.243
	PQ3	0.915**				5.73	1.241
Core Services	PQ4	0.857**	0.881	0.650	0.820	5.51	1.315
	PQ6	0.748**				5.78	1.215
	PQ7	0.843**				5.71	1.261
	PQ8	0.772**				5.63	1.285
Staff	PQ11	0.914**	0.948	0.819	0.926	6.13	1.093
	PQ12	0.924**				6.03	1.201
	PQ13	0.888**				6.33	.935
	PQ14	0.893**				5.93	1.161
Parking	PQ9	0.933**	0.921	0.853	0.828	5.30	1.512
	PQ10	0.914**				4.70	1.887
Competition Success	OQ1	0.948**	0.975	0.927	0.961	2.92	1.903
	OQ2	0.976**				2.75	1.822
	OQ3	0.964**				2.70	1.801
Social Connection	OQ4	0.979**	0.978	0.957	0.955	3.51	1.881
	OQ5	0.978**				3.63	1.895
Health and Fitness	OQ6	0.933**	0.946	0.853	0.914	6.07	1.074
	OQ7	0.945**				6.09	1.066
	OQ8	0.888**				5.89	1.276
Relaxation and Stress Release	OQ9	0.892**	0.934	0.825	0.894	5.13	1.710
	OQ10	0.899**				5.16	1.583
	OQ11	0.934**				5.46	1.506

Note: We used a bootstrapping routine (Hair, et al., 2017a) with 5000 sub-sample. ** $p < 0.05$.

6.7.3 Common Method Bias Test: Structural Model

As with Research Stage One, to evaluate the presence or absence of common method bias, Harman’s Single Factor Test (Podsakoff, et al., 2003) and a full collinearity test (Kock, 2015) were employed in Research Stage Two.

Harman’s Single-Factor Test involved analysing all items of latent constructs – process quality, outcome quality, value, satisfaction, self-efficacy, self-reported attendance behaviour, attitudinal loyalty, and behavioural loyalty – using the dimension reduction factor. Results (Table 6.18) determined the first factor as capturing 31% of the variance in data, and suggest that common method bias is not an issue.

Table 6.18 Common Method Bias: Harman’s Single Factor Test

Initial Eigenvalues				Extraction Sums of Squared		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.749	31.872	31.872	12.749	31.872	31.872
2	4.704	11.761	43.633			
3	2.820	7.051	50.684			
4	2.025	5.063	55.747			
5	1.968	4.920	60.668			
6	1.533	3.832	64.499			
7	1.333	3.333	67.832			
8	1.258	3.145	70.977			
9	1.124	2.811	73.788			
10	1.072	2.679	76.467			

To ensure consistency, a full collinearity test (Kock, 2015) measured the variance inflation factors (VIFs) for all latent constructs within the measurement model. This test demonstrated VIFs between 1.115 and 3.162. These results were below the threshold value of 3.3 suggested by Kock (2015, p. 7), and indicated an absence of common method bias within Research Stage Two. Results of the full collinearity test are presented in Table 6.19.

Table 6.19 Common Method Bias: Collinearity Approach

	Attitudinal Loyalty	Behavioural Loyalty	Outcome Quality	Process Quality	Retention	Satisfaction	Self-Efficacy	Self-Reported Behaviour	Value
Attitudinal Loyalty	0.000	2.042	2.222	2.231	2.233	1.896	2.229	2.229	2.191
Behavioural Loyalty	1.300	0.000	1.423	1.425	1.330	1.421	1.422	1.408	1.419
Outcome Quality	1.512	1.527	0.000	1.507	1.525	1.500	1.314	1.410	1.528
Process Quality	2.272	2.279	2.251	0.000	2.012	1.911	2.251	1.269	2.163
Retention	1.132	1.055	1.132	1.132	0.000	1.132	1.132	1.115	1.129
Satisfaction	2.717	3.162	3.156	2.703	3.115	0.000	3.179	2.745	2.807
Self-Efficacy	1.257	1.251	1.134	1.259	1.252	1.264	0.000	1.238	1.251
Self-Reported Behaviour	1.177	1.148	1.143	1.170	1.155	1.179	1.138	0.000	1.179
Value	2.198	2.230	2.254	2.129	2.178	1.968	2.241	2.130	0.000

6.7.4 Assessing Control Variables

Before an assessment of the structural model is undertaken, analysis of the effect of control variables is necessary. To assess control measures, analysis was restricted to observe only the relationships between control variables – gender, age, and tenure – and the dependent variable – member retention. In total, control measures observed 1.8% of the variance in member retention ($R^2 = 0.018$). An assessment of these relationships saw a non-significant relationship between gender and retention (p-value = 0.270), and age and retention (p-value = 0.330). Further, while there was a direct, positive and significant relationship between membership tenure and retention, a non-substantive effect size was demonstrated. These results suggest that while gender and age are not determinants of member retention, tenure is somewhat influential. Assessment of control variables provided insight to improve the accuracy of relationship estimates within the structural model. These control measures will be further assessed within the structural model.

Table 6.20 Control Variable Results

Relationships	Path Coefficient	T Statistic	P Value	Bias Corrected 95% CI	f ²	q ²
<i>Control Measures</i>						
Gender → Retention	0.039ns	1.090	0.270	[-0.050; 0.010]	0.000	0.000
Age → Retention	0.044ns	0.970	0.330	[-0.040; 0.140]	0.000	0.000
Membership Tenure → Retention	0.107	2.560	0.010	[-0.020; 0.190]	0.001	0.010

Note: ns refers to non-significant effects at the 0.05 level. All other effects significant at $p < 0.05$.

6.7.5 Assessing the Structural Model

Following the assertion of valid and reliable reflective and formative measures in Section 6.7.1 and Section 6.7.2, and the evaluation of control variables in Section 6.7.4, the structural model is now assessed. The suitability of the structural model is discussed using a number of statistical measures. These measures include coefficient of determination (R^2), effect size (f^2),

the blindfolding-based cross validated redundancy measure (Q^2), and the standardised root mean square residual (SRMR). Results of the structural model analysis are presented in Table 6.21.

R^2 intends to explain the amount of variability of one factor that is caused by its relationship with another factor, and resultantly depicts the model's in-sample explanatory power (Shmueli & Koppius, 2011). For Research Stage Two, meaningful R^2 values for each latent and observed construct were supported. Results were interpreted as: value $R^2 = 0.401$; satisfaction $R^2 = 0.631$; self-efficacy $R^2 = 0.179$; self-reported attendance behaviour $R^2 = 0.072$; attitudinal loyalty $R^2 = 0.482$; behavioural loyalty $R^2 = 0.147$; and retention $R^2 = 0.115$. Furthermore, control measures were maintained to assert the variance explained by independent variables beyond control variables (Becker, et al., 2016; Brannick, 2018). The inclusion of both independent and control variables saw the previously significant relationship between membership tenure and retention as non-significant within the structural model. In sum, the ability to explain member retention ($R^2 = 0.115$) was greatly improved through analysis of structural model constructs – process quality, outcome quality, value, satisfaction, self-efficacy, self-report attendance behaviour, attitudinal loyalty, and behavioural loyalty.

An assessment of relationship effect size was undertaken in Research Stage Two, in line with effect size groupings outlined in Section 4.8.3.1. An analysis of the output derived for effect size shows a large f^2 effect size for the relationship between satisfaction and attitudinal loyalty ($f^2 = 0.907$); medium effect size for the relationships between value and satisfaction ($f^2 = 0.280$), and outcome quality and self-efficacy ($f^2 = 0.162$); and small effect size for the relationships between satisfaction and behavioural loyalty ($f^2 = 0.106$), self-efficacy and self-reported attendance behaviour ($f^2 = 0.077$), behavioural loyalty and

retention ($f^2 = 0.068$), and self-reported attendance behaviour and behavioural loyalty ($f^2 = 0.054$). The four remaining relationships in the measurement model were evaluated as demonstrating non-significant effect sizes; these included the relationships between self-reported attendance behaviour and retention ($f^2 = 0.011$), self-reported attendance behaviour and attitudinal loyalty ($f^2 = 0.007$), process quality and self-efficacy ($f^2 = 0.004$), and attitudinal loyalty and retention ($f^2 = 0.000$).

To further support the analysis of effect size, predictive relevance of relationships was assessed through the Q^2 metric (Hair, et al., 2017a). The Q^2 statistic of process quality ($Q^2 = 0.490$), outcome quality ($Q^2 = 0.431$), value ($Q^2 = 0.368$), satisfaction ($Q^2 = 0.536$), self-efficacy ($Q^2 = 0.146$), self-reported attendance behaviour ($Q^2 = 0.070$), attitudinal loyalty ($Q^2 = 0.428$), behavioural loyalty ($Q^2 = 0.116$), and retention ($Q^2 = 0.100$), were respectively above zero. This supported the predictive relevance of constructs. Results are produced in Table 6.21.

As a final assessment of structural model suitability, the standardised root mean square residual (SRMR) was assessed. The SRMR for Research Stage Two, after the removal of non-significant relationships, was shown as 0.120. While results exceeded thresholds presented for good model fit, this was not deemed as concerning given lacking relevance of global model fit measures within PLS-SEM.

Table 6.21 Research Stage Two Measurement Model Results

Relationships	Path Coefficient	T Statistic	P Value	Bias Corrected 95% CI	f ²	q ²
<i>Control Measures</i>						
Gender → Retention	0.033ns	0.938	0.348	[-0.039; 0.099]	0.001	0.000
Age → Retention	0.002ns	0.060	0.952	[-0.076; 0.087]	0.000	-0.002
Membership Tenure → Retention	0.055ns	1.301	0.193	[-0.028; 0.136]	0.003	0.000
<i>Measurement Model Constructs</i>						
Process Quality → Self-Efficacy	0.065ns	1.497	0.134	[-0.018; 0.153]	0.004	0.003
Outcome Quality → Self-Efficacy	0.394	9.129	0.000	[0.302; 0.473]	0.162	0.128
Value → Satisfaction	0.415	10.113	0.000	[0.335; 0.496]	0.280	0.190
Satisfaction → Attitudinal Loyalty	0.687	25.707	0.000	[0.626; 0.733]	0.907	0.731
Satisfaction → Behavioural Loyalty	0.302	6.856	0.000	[0.211; 0.383]	0.106	0.083
Self-Efficacy → Self-Reported Behaviour	0.268	7.880	0.000	[0.200; 0.333]	0.077	0.075
Self-Reported Behaviour → Attitudinal Loyalty	0.062	2.101	0.036	[0.007; 0.119]	0.007	0.005
Self-Reported Behaviour → Behavioural Loyalty	0.215	5.277	0.000	[0.128; 0.290]	0.054	0.040
Self-Reported Behaviour → Retention	0.103	3.261	0.001	[0.038; 0.163]	0.011	0.089
Attitudinal Loyalty → Retention	-0.021ns	0.262	0.793	[-0.105; 0.086]	0.000	-0.003
Behavioural Loyalty → Retention	0.296	4.756	0.000	[0.163; 0.4060]	0.068	0.064

Note: ns refers to non-significant effects at the 0.05 level. All other effects significant at $p < 0.05$.

R^2 (Value = 0.401; Satisfaction = 0.631; Self-Efficacy = 0.180; Self-Reported Attendance Behaviour = 0.072; Attitudinal Loyalty = 0.482; Behavioural Loyalty = 0.147; Retention = 0.115). Q^2 (Process Quality = 0.490; Outcome Quality = 0.431; Value = 0.368; Satisfaction = 0.536; Self-Efficacy = 0.146; Self-Reported Attendance Behaviour = 0.070; Attitudinal Loyalty = 0.428; Behavioural Loyalty = 0.116; Retention = 0.100). Effect size f^2 is interpreted in line with Cohen (1988): 0.35 (large), 0.15 (medium), 0.02 (small), and Henseler, et al. (2009) for predictive relevance q^2 : 0.35 (large), 0.15 (medium), and 0.02 (small).

6.7.6 Direct, Indirect and Total Effects

An evaluation of the path model intends to decompose the influences of one variable on another in total, direct, and indirect effects (Bollen, 1987). The direct, indirect, and total effects of variable constructs within Research Stage Two are presented and summarised in Table 6.22. This evaluation of effect depicts satisfaction as having the highest significant total effect on both attitudinal loyalty (0.687) and behavioural loyalty (0.302). Furthermore, the highest significant effect on retention is shown to be behavioural loyalty (0.286), followed by self-reported attendance behaviour (0.164). This replicated the findings shown through the measurement model results.

When assessing the total effect of lower-order process quality and outcome quality dimensions, key drivers were shown to be consistent across latent variables. It can be seen for process quality that core services and staff were the most prominent drivers affecting both attitudinal and behavioural loyalty, while the key drivers for the outcome quality construct were depicted as being most consistently health and fitness and relaxation and stress release (Table 6.22).

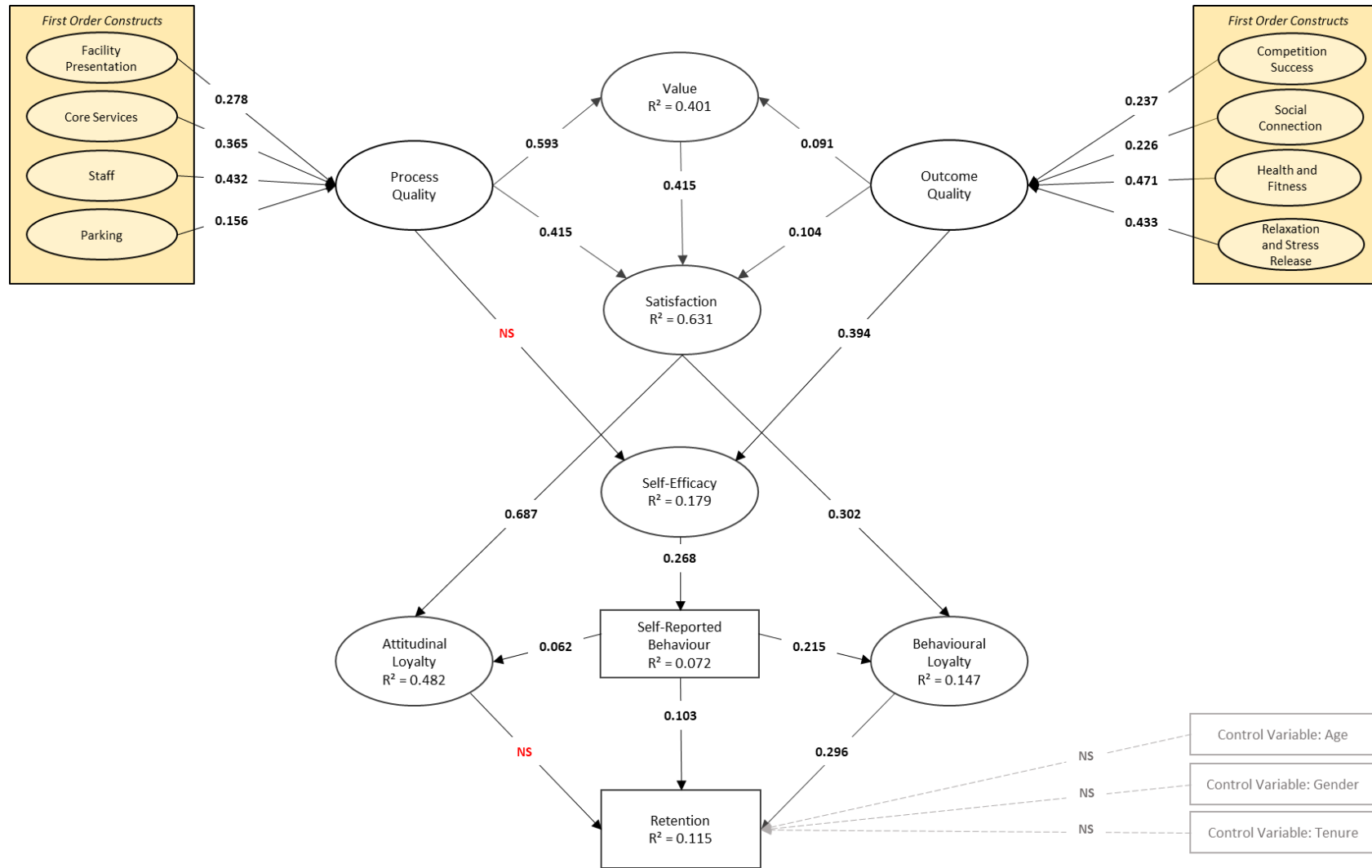
Table 6.22 Research Stage Two Inner Model Effects (PLS-SEM)

Path	Direct	Indirect	Total
Process Quality → Value	0.593	0.000	0.593
Facility Presentation → Value	0.000	0.164	0.164
Core Services → Value	0.000	0.219	0.219
Staff → Value	0.000	0.256	0.256
Parking → Value	0.000	0.090	0.090
Process Quality → Satisfaction	0.415	0.246	0.661
Facility Presentation → Satisfaction	0.000	0.183	0.183
Core Services → Satisfaction	0.000	0.244	0.244
Staff → Satisfaction	0.000	0.285	0.285
Parking → Satisfaction	0.000	0.101	0.101
Process Quality → Self-Efficacy	0.065	0.000	0.065
Facility Presentation → Self-Efficacy	0.000	0.018	0.018

Path	Direct	Indirect	Total
Core Services → Self-Efficacy	0.000	0.024	0.024
Staff → Self-Efficacy	0.000	0.028	0.028
Parking → Self-Efficacy	0.000	0.010	0.010
Process Quality → Attitudinal Loyalty	0.000	0.455	0.455
Facility Presentation → Attitudinal Loyalty	0.000	0.126	0.126
Core Services → Attitudinal Loyalty	0.000	0.168	0.168
Staff → Attitudinal Loyalty	0.000	0.196	0.196
Parking → Attitudinal Loyalty	0.000	0.069	0.069
Process Quality → Behavioural Loyalty	0.000	0.203	0.203
Facility Presentation → Behavioural Loyalty	0.000	0.056	0.056
Core Services → Behavioural Loyalty	0.000	0.075	0.075
Staff → Behavioural Loyalty	0.000	0.088	0.088
Parking → Behavioural Loyalty	0.000	0.031	0.031
Process Quality → Retention	0.000	0.054	0.054
Facility Presentation → Retention	0.000	0.015	0.015
Core Services → Retention	0.000	0.020	0.020
Staff → Retention	0.000	0.023	0.023
Parking → Retention	0.000	0.008	0.008
Outcome Quality → Value	0.091	0.000	0.091
Competition Success → Value	0.000	0.022	0.022
Social Connection → Value	0.000	0.021	0.021
Health and Fitness → Value	0.000	0.043	0.043
Relaxation and Stress Release → Value	0.000	0.039	0.039
Outcome Quality → Satisfaction	0.104	0.038	0.142
Competition Success → Satisfaction	0.000	0.034	0.034
Social Connection → Satisfaction	0.000	0.032	0.032
Health and Fitness → Satisfaction	0.000	0.067	0.067
Relaxation and Stress Release → Satisfaction	0.000	0.061	0.061
Outcome Quality → Self-Efficacy	0.394	0.000	0.394
Competition Success → Self-Efficacy	0.000	0.094	0.094
Social Connection → Self-Efficacy	0.000	0.089	0.089
Health and Fitness → Self-Efficacy	0.000	0.186	0.186
Relaxation and Stress Release → Self-Efficacy	0.000	0.171	0.171
Outcome Quality → Attitudinal Loyalty	0.000	0.104	0.104
Competition Success → Attitudinal Loyalty	0.000	0.025	0.025
Social Connection → Attitudinal Loyalty	0.000	0.023	0.023
Health and Fitness → Attitudinal Loyalty	0.000	0.049	0.049
Relaxation and Stress Release → Attitudinal	0.000	0.045	0.045
Outcome Quality → Behavioural Loyalty	0.000	0.066	0.066

Path	Direct	Indirect	Total
Competition Success → Behavioural Loyalty	0.000	0.016	0.016
Social Connection → Behavioural Loyalty	0.000	0.015	0.015
Health and Fitness → Behavioural Loyalty	0.000	0.031	0.031
Relaxation and Stress Release → Behavioural	0.000	0.028	0.028
Outcome Quality → Retention	0.000	0.028	0.028
Competition Success → Retention	0.000	0.007	0.007
Social Connection → Retention	0.000	0.006	0.006
Health and Fitness → Retention	0.000	0.013	0.013
Relaxation and Stress Release → Retention	0.000	0.012	0.012
Value → Satisfaction	0.415	0.000	0.415
Value → Attitudinal Loyalty	0.000	0.285	0.285
Value → Behavioural Loyalty	0.000	0.125	0.125
Value → Retention	0.000	0.032	0.032
Satisfaction → Attitudinal Loyalty	0.687	0.000	0.687
Satisfaction → Behavioural Loyalty	0.302	0.000	0.302
Satisfaction → Retention	0.000	0.078	0.078
Self-Efficacy → Self-Reported Behaviour	0.268	0.000	0.268
Self-Efficacy → Attitudinal Loyalty	0.00	0.020	0.020
Self-Efficacy → Behavioural Loyalty	0.00	0.060	0.060
Self-Efficacy → Retention	0.00	0.040	0.040
Self-Reported Behaviour → Attitudinal	0.062	0.000	0.062
Self-Reported Behaviour → Behavioural	0.215	0.000	0.215
Self-Reported Behaviour → Retention	0.103	0.061	0.164
Attitudinal Loyalty → Retention	-0.013	0.000	-0.013
Behavioural Loyalty → Retention	0.296	0.000	0.296

Figure 6.5 Research Stage Two Structural Model



Note: We used a bootstrapping routine (Hair, et al., 2017a) with 5000 subsamples, and a no sign change option to determine the significance of the path coefficients.

6.8 Discussion

Research Stage Two developed and tested structural model relationships to address the research question: how do self-efficacy, self-reported attendance behaviour, and multi-dimensional loyalty enhance the explanation of member retention in a fitness facility context? The implications from Research Stage Two findings are presented next. *Firstly*, a short review of this stage is presented. *Secondly*, structural model results are discussed in relation to research hypotheses. *Finally*, outcomes are discussed and contributions to sport and leisure management are supported. While specific results corresponding to Research Stage Two are discussed next, a detailed synthesis of all discussion follows in later chapters.

6.8.1 Research Stage Two: Overview

Research Stage Two provided a structural model with enhanced suitability for explaining member retention in a fitness facility context. Specifically, integration of reciprocal interactions between individual, environmental, and behavioural influences of SCT, including additions of self-efficacy and self-reported attendance behaviour, enhanced the ability of the model to explain member retention. Explanation of member retention was also improved by incorporating loyalty as a multi-dimensional construct.

Research Stage Two was informed by Research Stage One, and the evaluation of the Howat and Assaker (2016) model. Research Stage Two data collection also occurred within a public fitness facility in Australia. Exploration saw application of two data analysis methods: Confirmatory Factor Analysis (CFA) and a Partial Least Squares Structural Equation Model (PLS-SEM). Methods employed tested the structure of constructs, hypothesised relationships, and supported the reliability and validity of dimensions. This analysis was outlined in Section 6.6 and Section 6.7.

Findings supported that SCT influences added to the ability to understand and explain member retention in a fitness facility context. Further, the utility of a multi-dimensional conceptualisation of loyalty was validated. In sum, measured constructs explained 11.5% of the variance in member retention. Particularly, self-reported attendance behaviour and behavioural loyalty were supported as direct determinants of member retention. A discussion of construct relationships is presented next, in line with research hypotheses corresponding to Research Stage Two.

6.8.2 Research Stage Two: Hypothesis Testing

A number of positive and significant relationships were determined through examination of the Research Stage Two structural model (Figure 6.5). Specifically, nine hypotheses (H6, H7, H8, H9, H10, H11, H12 and H14) were supported, while two (H5, and H13) were rejected. These hypothesised relationships are summarised in Table 6.23.

Table 6.23 Research Stage Two Hypothesis Testing

	Relationships	Path Coefficient	T Statistic	P Value	Bias Corrected 95% CI	f ²	q ²	Decision
H5	Process Quality → Self-Efficacy	0.065ns	1.497	0.134	[-0.018; 0.153]	0.004	0.003	Reject
H6	Outcome Quality → Self-Efficacy	0.394	9.129	0.000	[0.302; 0.473]	0.162	0.128	Support
-	Value → Satisfaction	0.415	10.113	0.000	[0.335; 0.496]	0.280	0.190	Support
H7	Satisfaction → Attitudinal Loyalty	0.687	25.707	0.000	[0.626; 0.733]	0.907	0.731	Support
H8	Satisfaction → Behavioural Loyalty	0.302	6.856	0.000	[0.211; 0.383]	0.106	0.083	Support
H9	Self-Efficacy → Self-Reported Behaviour	0.268	7.880	0.000	[0.200; 0.333]	0.077	0.075	Support
H10	Self-Reported Behaviour → Attitudinal Loyalty	0.062	2.101	0.036	[0.007; 0.119]	0.007	0.005	Support
H11	Self-Reported Behaviour → Behavioural Loyalty	0.215	5.277	0.000	[0.128; 0.290]	0.054	0.040	Support
H12	Self-Reported Behaviour → Retention	0.103	3.261	0.001	[0.038; 0.163]	0.011	0.089	Support
H13	Attitudinal Loyalty → Retention	-0.021ns	0.262	0.793	[-0.105; 0.086]	0.000	-0.003	Reject
H14	Behavioural Loyalty → Retention	0.296	4.756	0.000	[0.163; 0.406]	0.068	0.064	Support

Note: ns refers to non-significant effects at the 0.05 level. All other effects significant at $p < 0.05$.

R² (Value = 0.401; Satisfaction = 0.631; Self-Efficacy = 0.180; Self-Reported Attendance Behaviour = 0.072; Attitudinal Loyalty = 0.482; Behavioural Loyalty = 0.147; Retention = 0.115). Q² (Process Quality = 0.490; Outcome Quality = 0.431; Value = 0.368; Satisfaction = 0.536; Self-Efficacy = 0.146; Self-Reported Attendance Behaviour = 0.070; Attitudinal Loyalty = 0.428; Behavioural Loyalty = 0.116; Retention = 0.100). Effect size f² is interpreted in line with Cohen (1988): 0.35 (large), 0.15 (medium), 0.02 (small), and Henseler, et al. (2009) for predictive relevance q²: 0.35 (large), 0.15 (medium), and 0.02 (small).

H5: Process quality has a direct, positive effect on self-efficacy.

Hypothesis 5 proposed a direct, positive relationship between process quality and self-efficacy. Results of the structural model demonstrated a non-significant relationship, with a path coefficient of 0.065, p-value of 0.134, and non-significant effect size of 0.004. Hypothesis 5 is rejected, suggesting that member perception of tangible and intangible service touchpoints is not positively related to self-efficacy.

H6: Outcome quality has a direct, positive effect on self-efficacy.

Hypothesis 6 proposed a direct, positive effect of outcome quality on self-efficacy. This relationship was supported through a significant path coefficient of 0.394, p-value of 0.000, and medium relationship effect size of 0.162. Hypothesis 6 is supported, suggesting that member perception of outcomes received as a result of engagement experience is positively related to self-efficacy.

H7: Overall satisfaction has a direct, positive effect on attitudinal loyalty.

Hypothesis 7 proposed a direct, positive effect of overall satisfaction on attitudinal loyalty. Analysis demonstrated a positive path coefficient of 0.687, significant p-value of 0.000, and large effect size of 0.907. Hypothesis 7 is therefore supported. Findings determine overall satisfaction as strongly, and positively, related to the intention to recommend in a fitness facility context.

H8: Overall satisfaction has a direct, positive effect on behavioural loyalty.

Hypothesis 8 proposed a direct, positive effect of overall satisfaction on behavioural loyalty. The analysis of this relationship demonstrated a positive path coefficient of 0.302, significant p-value of 0.000, and small effect size of 0.106. It is therefore supported that

overall satisfaction is positively related to the intention to renew, or continue, membership in a fitness facility context.

H9: Self-efficacy has a direct, positive effect on self-reported attendance behaviour.

Hypothesis 9 proposed a direct, positive effect of self-efficacy on self-reported attendance behaviour. Results demonstrated a significant path coefficient of 0.268, p-value of 0.000, and a small effect size 0.077 for this relationship. Hypothesis 9 is therefore supported. Findings suggests self-efficacy as positively related to self-reported attendance behaviour.

H10: Self-reported attendance behaviour has a direct, positive effect on attitudinal loyalty.

Hypothesis 10 proposed a direct, positive effect of self-reported attendance behaviour on attitudinal loyalty. Results demonstrated a path coefficient of 0.062 and p-value of 0.036, but with a negligible effect size of 0.007. Hypothesis 10 is supported, with a statistically significant, but non-substantive relationship determined.

H11: Self-reported attendance behaviour has a direct, positive effect on behavioural loyalty.

Hypothesis 11 proposed a direct, positive relationship between self-reported attendance behaviour and behavioural loyalty. Results demonstrated a path coefficient of 0.215, p-value of 0.000, and small effect size of 0.054. Hypothesis 11 is therefore supported, with findings suggesting self-reported attendance behaviour as positively related to the intention to renew, or continue, membership in a fitness facility context.

H12: Self-reported attendance behaviour has a direct, positive effect on retention.

Hypothesis 12 proposed a direct, positive relationship between self-reported attendance behaviour and member retention. Results demonstrated a path coefficient of 0.103, significant p-value of 0.001, but with a negligible effect size of 0.011. Hypothesis 12 is supported, with a statistically significant, but non-substantive relationship.

H13: *Attitudinal loyalty has a direct, positive effect on member retention.*

Hypothesis 13 proposed a direct, positive effect of attitudinal loyalty on member retention. Findings demonstrated a negative path coefficient of -0.021, a non-significant p-value of 0.793 and effect size of 0.000. Hypothesis 13 is therefore rejected due to the absence of a significant relationship and suggests that member intention to recommend a fitness facility does not directly contribute to member retention.

H14: *Behavioural loyalty has a direct, positive effect on member retention.*

Hypothesis 14 proposed a direct, positive effect of behavioural loyalty on member retention. Findings demonstrated a significant path coefficient of 0.296, p-value of 0.000, and small relationship effect size of 0.068. Hypothesis 14 is supported, suggesting that member intention to renew, or continue, their fitness facility membership directly contributes to member retention in a fitness facility context.

6.8.3 Research Stage Two: Discussion

Research Stage Two investigates RQ2; *How do self-efficacy, self-reported attendance behaviour, and multi-dimensional loyalty enhance the explanation of member retention in a fitness facility context?* While direct paths and relationships were explored through the ten hypotheses evaluated in Section 6.8.2, a discussion of the broader implications of findings is necessary. Key findings and corresponding implications are discussed individually in sections for: Social Cognitive Theory (Section 6.8.3.1), Self-Efficacy (Section 6.8.3.2), Loyalty (Section 6.8.3.3), Self-Reported Attendance Behaviour (Section 6.8.3.4), and Member Retention (Section 6.8.3.5).

6.8.3.1 Social Cognitive Theory

The capture and integration of SCT allowed for an enhanced understanding of member retention determinants. To integrate SCT, Research Stage Two replicated the validated conceptualisation of process quality and outcome quality, and uniquely assessed the role of self-efficacy and self-reported behaviour. While conceptualisation of process quality and outcome quality was unchanged from Research Stage One, interpretation focussed on reciprocal interactions that influence attitudes and behaviour. Overall, findings suggest SCT influences enhance explanation of attitudes and behaviours in a fitness facility context. This is discussed next, as relevant to individual, environmental and behavioural influences.

Within an SCT framework, process quality represented the evaluation of environmental influences, which were significant antecedents to value and satisfaction. Specifically, significant relationships ascertained that members who positively perceived tangible and intangible service touchpoints were more likely to perceive value, and to be satisfied. Conversely, findings failed to support the role of process quality as significant in explaining self-efficacy. From an SCT perspective this relationship is adverse, conflicting with the key tenet of reciprocal determinism. Therefore, while findings suggest that behaviour does not result from any SCT influence in isolation (Crittenden, 2005), the impact of process quality perceptions should be considered with caution. Alternatively, an indirect role of process quality in explaining attitudinal loyalty, behavioural loyalty and member retention is supported. From an SCT perspective, these relationships progress understanding of the role of cognitive representations of the environment for developing behaviour facilitation and maintenance. Overall, while environmental influences have an indirect pathway to member retention, findings suggest a less critical and less active role through the lens of reciprocal determinism.

Outcome quality can be likened to outcome expectations and is therefore posited as equivalent to evaluating individual influences within SCT. Findings suggested the role of outcome quality was significant for explaining value, satisfaction, and self-efficacy. The significant relationship between outcome quality and satisfaction differed from that of previous research stages; perhaps substantiated given the use of a multi-item satisfaction scale in Research Stage Two to attempt to improve measurement of the construct. Further, a significant relationship between outcome quality and self-efficacy validated their dual classification as individual influences and supported reciprocal determinism. While self-efficacy is discussed further in Section 6.8.3.2, reciprocal determinism suggests influences cannot be evaluated separately, and do not influence behaviour in isolation. Additionally, an indirect relationship was evident for the role of outcome quality in explaining attitudinal loyalty, behavioural loyalty, and member retention. Assertion of direct and indirect relationships supported outcome quality as a distinct construct of service quality and reinforced the value and necessity of a multi-dimensional conceptualisation for service quality. Overall, findings validated the inclusion of outcome quality through the lens of SCT, with practical and managerial implications.

To represent behavioural influences of SCT, Research Stage Two measured and evaluated the role of self-reported attendance behaviour. Findings determined self-reported attendance behaviour as a significant determinant of attitudinal loyalty, behavioural loyalty, and member retention. These relationships support the utility of viewing behaviour as not merely an outcome, but also a cause of behaviour, and enhance the suitability of the model for explaining member retention. This poses valuable practical and managerial implications, where retention is imperative for the financial viability of fitness facilities. The role of self-reported attendance behaviour is discussed further in Section 6.8.3.4.

An integrated view of SCT permitted evaluation of a greater array of constructs and relationships that stimulate exercise maintenance and facilitation. In particular, behavioural influences greatly aided the ability to explain member retention outcomes. Consideration of service quality dimensions through the lens of SCT further distinguished the role of process quality, and outcome quality, supporting a multi-dimensional conceptualisation. In this way, findings demonstrated the significance of investigating *both* customers' perceptions of the service attributes, and the outcomes of service engagement, in line with existing conceptualisation (Howat & Assaker, 2016). Discerning the value and applicability of individual, environmental and behavioural influences extends the options for conceptualisation and measurement within sport and leisure contexts and substantiates the use of SCT in a breadth of research areas. These findings inform subsequent research stages, which enhance investigation through observed behaviour.

6.8.3.2 Self-Efficacy

Self-efficacy was evaluated to facilitate the integration of SCT within Research Stage Two. Findings supported the role of self-efficacy as a direct determinant of self-reported attendance behaviour. These findings are in line with previous research, which position self-efficacy as positively related to physical activity maintenance (e.g. Hankonen, et al., 2010; Sallis, et al., 1992; Strachan, et al., 2005; White, et al., 2012). Further, support is provided for reciprocal determinism. Findings proposed that behavioural influences may insufficiently influence behaviour if customers doubt their capability to successfully engage in exercise. Beyond a direct effect, indirect relationships were shown for the role of self-efficacy in explaining attitudinal loyalty, behavioural loyalty, and member retention. Assertion of direct and indirect relationships supported the merit of self-efficacy and reinforce the value and necessity of developing interventions that encourage self-efficacy in fitness facility contexts.

Furthermore, Research Stage Two contributed to an enhanced understanding of self-efficacy determinants in a fitness facility context. Specifically, while a significant relationship between outcome quality and self-efficacy was supported, a non-significant relationship was determined for process quality and self-efficacy. Findings suggest that although expected outcomes contribute to an individual's belief in their ability successfully execute exercise behaviour, perception of tangible and intangible service touchpoints do not. Overall, direct and indirect determinants explained 17.9% of the variance in self-efficacy. Advanced understanding of determinants support that to improve self-efficacy, outcome quality should be a focus.

In summary, findings developed an understanding of the determinants and consequences of self-efficacy and affirmed the importance of self-efficacy consideration in fitness facility contexts. Specifically, outcome quality was validated as a direct determinant of self-efficacy, with self-efficacy serving as a direct determinant of self-reported attendance behaviour. As a unique contribution of Research Stage Two, enhanced understanding of self-efficacy provides impetus to support the reciprocal role of individual and behavioural influences of SCT, and shapes investigation in subsequent research stages.

6.8.3.3 Loyalty

Development and investigation of a multi-dimensional conceptualisation of loyalty was supported within Research Stage Two. This contribution conceptualised loyalty distinctly as attitudinal loyalty and behavioural loyalty, as opposed to past work (e.g., Howat & Assaker, 2016) and Research Stage One of this research. Conceptualisation supported Dick and Basu (1994, p.99) who assert that “customer loyalty is viewed as the strength of the relationship between an individual's relative attitude and their repeat patronage”. This reconceptualisation, as a unique advance of this research, provided scope for the distinct

antecedents and consequences of loyalty constructs to be determined in a fitness facility context.

Findings enhanced understanding of loyalty antecedents in a fitness facility context. Specifically, satisfaction and self-reported attendance behaviour were supported as direct determinants of attitudinal loyalty and behavioural loyalty. Depiction of satisfaction was akin to previous research that positions a significant relationship between satisfaction and willingness to recommend (e.g. Funk, et al., 2016; Howat, et al., 1999), and behavioural intentions or loyalty (e.g. Funk, et al., 2016; Pedragosa & Correia, 2009; Yu, et al., 2014). However, while the role of satisfaction was unanimously supported, a greater explanatory power was evident for explaining attitudinal loyalty, compared to behavioural loyalty. The strength of this relationship proposes satisfaction as most crucial in developing intention to recommend the facility (above its role in developing behavioural intentions). Further, while the role of self-reported attendance behaviour was concurrently significant, greater explanatory power was evident for behavioural loyalty, compared to attitudinal loyalty. Enhanced explanatory power here is logical, asserting past behaviour as significantly contributing to member behavioural, or renewal, intention. Overall, determinants culminated to explain 48.2% of the variance in attitudinal loyalty, and 14.7% of the variance in behavioural loyalty. Distinction of the explanatory power of determinants promotes a multi-dimensional conceptualisation of loyalty as optimal in a fitness facility context.

A valuable contribution of this research positions behavioural loyalty as superseding attitudinal loyalty when delineating member retention in a fitness facility context. A significant relationship was supported between behavioural loyalty and member retention, comparable with past sport research (e.g. McDonald, 2010; McDonald et al., 2014). Conversely, a non-significant relationship between attitudinal loyalty and member retention

supported that found in Research Stage One, as well as previous assertions (e.g., Bodet, 2008). Relationship non-significance has implications for the interpretation of utility of past work (e.g. Howat & Assaker, 2016). Specifically, incorporation of a multi-dimensional approach to loyalty, and the superior relationship of behavioural loyalty in explaining member retention, suggested that important components have been omitted in past work. Further, the broader significance of attitudinal loyalty is questioned, as loyalty indicators are only considered valuable *if* they can be used to predict behaviours (East, et al., 2005). Overall, findings emphasise a need to prioritise behavioural loyalty measurement to effectively address member retention, and that collection of attitudinal loyalty indicators should be tempered when delineating member retention behaviour. Concurrent evaluation of the role of distinct loyalty constructs for explaining member retention is a novel research contribution.

Research Stage Two provides a specific and functional understanding of loyalty that enables greater intricacy of intervention design. Such conceptual development enables practitioners to target specific conditions underlying loyalty more effectively. Further, a multi-dimensional conceptualisation of loyalty improves explanation of member retention compared to Research Stage One, where only attitudinal loyalty was used. Implementation of this view validated behavioural loyalty as superior for explaining member retention. This is a contribution of current research, where distinct and concurrent consideration of multiple dimensions of loyalty has been largely absent from a fitness facility perspective.

6.8.3.4 Self-Reported Attendance Behaviour

Assessment of self-reported attendance behaviour is a further novel contribution of Research Stage Two. Specifically, findings empirically validated the significant role of self-reported attendance behaviour in explaining attitudinal loyalty, behavioural loyalty, and member

retention. Moreover, the novel inclusion of behavioural influences, represented as self-reported attendance behaviour, provides consideration of self-reported attendance behaviour through an SCT lens. This view advances past frameworks, in particular that developed by Howat and Assaker (2016) and tested in Research Stage One.

The utility of self-reported attendance behaviour was supported through a direct and significant role in explaining member retention. This is a valuable contribution where previous research has inadequately assessed behaviours as both a cause of future behaviour, as well as an outcome or effect (Phipps, et al., 2013). Further, while postulation within wider sport research has validated past behaviour as an obvious predictor of future behaviour in, for example, professional sport (Katz et al., 2020; McDonald, 2010), this assessment remains largely absent in a fitness facility setting. Therefore, deeper consideration and support for the role of behaviour patterns and past behaviour derives important implications. Overall, findings propose that behavioural influences, such as self-reported attendance behaviour, should not be viewed as merely an outcome, but also a cause of behaviour facilitation and maintenance. Support for a direct relationship proposes that for impactful intervention design, consideration to self-reported attendance behaviour is important, or even necessary.

Further, findings validated self-reported attendance behaviour as a significant determinant of both attitudinal loyalty and behavioural loyalty. While these relationships were supported unanimously, the explanatory role of self-reported attendance behaviour was greater for behavioural loyalty, compared to attitudinal loyalty. The superior relationship between attitudinal constructs depicting behaviour is logical, given aforementioned support of the role of past behaviour in predicting future behaviour (Katz et al., 2020; McDonald, 2010). Overall, findings propose that to adequately determine a member's inclination to recommend a fitness facility, or renew their fitness facility membership, consideration must

be made to their past attendance behaviour. Therefore, collectively, self-reported attendance behaviour is supported for enhancing interpretation of loyalty constructs in a fitness facility context and provides impetus for subsequent research stages.

In sum, Research Stage Two uniquely considered behavioural influences of SCT through the assessment of self-reported attendance behaviour. Clarity was provided for the role self-reported attendance behaviour, supporting the utility of its inclusion when delineating member loyalty and retention in a fitness facility context. Findings inform subsequent research stages, which progress investigation of behavioural influences through assessment of observed attendance behaviour.

6.8.3.5 Member Retention

Progressing previous research stages, integration of SCT influences and distinction of a multi-dimensional loyalty construct enhanced explanation of member retention. The Research Stage Two structural model supported self-reported attendance behaviour and behavioural loyalty as direct determinants of retention, with modelled constructs explaining 11.5% of total variance. Validation of the direct and indirect ability of modelled constructs to explain member retention advances previous understanding, informing valuable implications.

While construct relations have been discussed previously, the value of direct and indirect relationships was reinforced for their ability to delineate member retention. Assessing direct relationships saw support of self-reported attendance behaviour and behavioural loyalty. Assertion of these variables as direct determinants aligns with previous work which positions loyalty (Finn, et al., 2009; Keiningham, et al., 2007; Reichheld, 2003) and frequent and regular attendance (Duncan, et al., 2005; McDonald, 2010; San Emeterio, et al., 2016, Yi, et al., 2020), as indicative of retention. While similarities were demonstrated, joint

relationships have not been captured empirically in a fitness facility context, and therefore distinguish the contribution of current findings.

Critically, that attitudinal loyalty was not significantly related to member retention poses important implications. Specifically, a non-significant relationship proposes collection and use of attitudinal loyalty indicators should be tempered when seeking to delineate member retention. Broadly, support of direct relationships advocates that for impactful member retention intervention, consideration to self-reported attendance behaviour and behavioural loyalty should be prioritised in a fitness facility context. Moreover, indirect support was determined for the role of process quality, outcome quality, value, satisfaction, and self-efficacy in explaining member retention. Therefore, with the exception of attitudinal loyalty, all structural model constructs are viewed as important in the development of member retention, either directly or indirectly.

Research Stage Two findings advanced understanding of member retention as a loyalty outcome, building on past work that has primarily focussed on attitudes or intentions as the 'outcome' in a fitness facility context. This examination and extension to actual behaviours as an outcome supports the role of self-reported attendance behaviour and behavioural loyalty as direct, significant determinants of member retention in a fitness facility context. Findings provide impetus for subsequent research stages, which intend to examine the role of observed attendance behaviour within the structural model, and its role specifically for explaining member retention.

6.9 Chapter Summary

Analysis for Research Stage Two detailed the distribution and analysis of measurement model constructs and relationships. Reliability and validity testing were pursued to determine

construct suitability for inclusion in the structural model. The structural model was presented in Figure 6.5, and discussed in Section 6.8. This discussion proposed the implications Research Stage Two and detailed the ability of modelled constructs to delineate member retention.

In sum, a number of findings implicit within Research Stage Two assist in achieving the overarching research aim: *How do self-efficacy, self-reported attendance behaviour, and multi-dimensional loyalty enhance the explanation of member retention in a fitness facility context?* Evaluation of self-efficacy saw outcome quality supported (H7), and process quality rejected (H6) as significant determinants. These findings are useful from an SCT perspective, shaping understanding of reciprocal determinism. Satisfaction was supported as a significant determinant of both attitudinal loyalty (H7) and behavioural loyalty (H8), akin to previous research. Moreover, the suitability of the structural model was enhanced through the significant role of self-efficacy in explaining self-reported behaviour (H9), and self-reported behaviour in explaining attitudinal loyalty (H10), behavioural loyalty (H11), and member retention (H12). Such relationships supported the utility of integrating SCT influences in a fitness facility context. Further, conceptualisation of a multi-dimensional loyalty construct enhanced understanding of member loyalty antecedents and consequences. This distinction saw only behavioural loyalty supported as a determinant of member retention (H14), while attitudinal loyalty was not supported (H13). Overall, measured constructs enhanced delineation of member retention, demonstrating significant relationships, and provide impetus for subsequent research stages.

CHAPTER 7: DATA ANALYSIS – RESEARCH STAGE THREE

7.1 Introduction

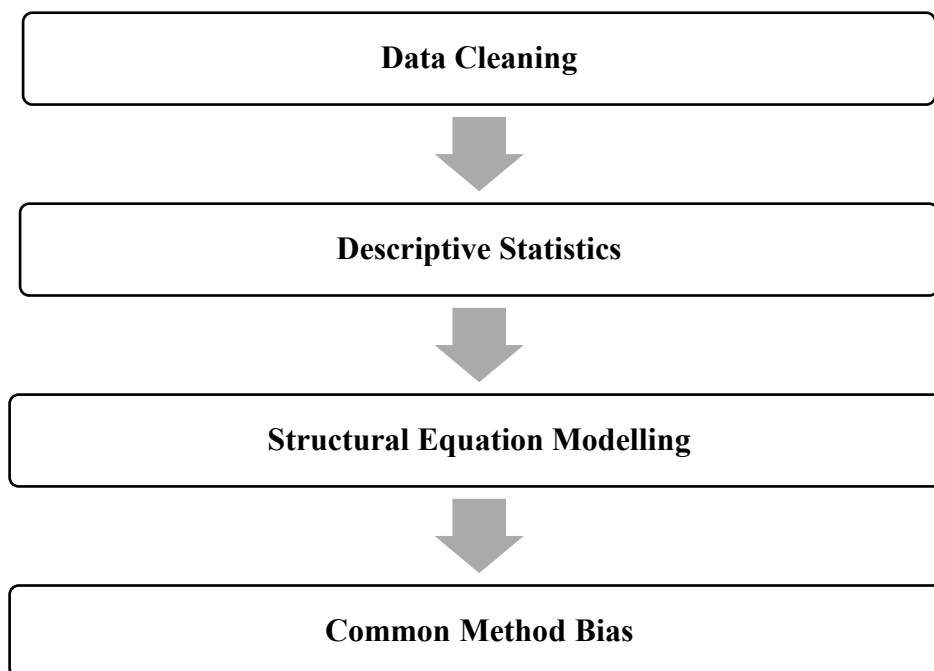
In earlier chapters, measures, constructs, and structural models were used to evaluate member retention determinants in a fitness facility context. Research Stage One defined a number of attitudes and perceptions relating to membership engagement with their fitness facility through a replication of the Howat and Assaker (2016) model. Research Stage Two refined and enhanced the conceptualisation, integrating a Social Cognitive Theory (SCT) view of behaviour and a multi-dimensional conceptualisation of loyalty. The current chapter details the results of Research Stage Three, evaluating the ability for concurrent assessment of attitudinal and behavioural data constructs to explain member retention. Specifically, the role of observed attendance behaviour is introduced, measured using member attendance frequency and consistency. This stage of research saw member retention determinants evaluated through attitudinal survey constructs collected in Research Stage Two and observed attendance behaviour collected in Research Stage Three. Data analysis for Research Stage Three addressed RQ3 (H15 – H18) and is summarised in Table 7.1.

Table 7.1 Research Stage Three Summary

Research Question	Hypothesis
<p>RQ3: How does observed attendance behaviour enhance the explanation of member retention in a fitness facility context?</p>	<p>H15: Self-efficacy has a direct, positive effect on observed attendance behaviour.</p> <p>H16: Observed attendance behaviour has a direct, positive effect on attitudinal loyalty.</p> <p>H17: Observed attendance behaviour has a direct, positive effect on behavioural loyalty.</p> <p>H18: Observed attendance behaviour has a direct, positive effect on retention.</p>

Research Stage Three attitudinal data was collected as part of the online questionnaire detailed within Research Stage Two. As a result, questionnaire items and scales were outlined in Section 4.6.3, and evaluated in Chapter 6. Collection and assessment of observed attendance behaviour was enabled through the export of information from the partner organisation's data management systems. This system manages the software, marketing, and payments systems for full-service health facilities, inclusive of the partnered organisation. Detail of observed attendance behaviour data collection is presented in Section 4.6.4. A summary of Research Stage Three data analysis is provided below in Figure 7.1.

Figure 7.1 Summary of Research Stage Three Data Analysis



7.2 Data Cleaning

For observed attendance behaviour, data cleaning defined active membership periods, from which to derive key behavioural statistics for analysis within the Partial Least Squares Structural Equation Model (PLS-SEM). Data was extracted from Links Modular Solutions

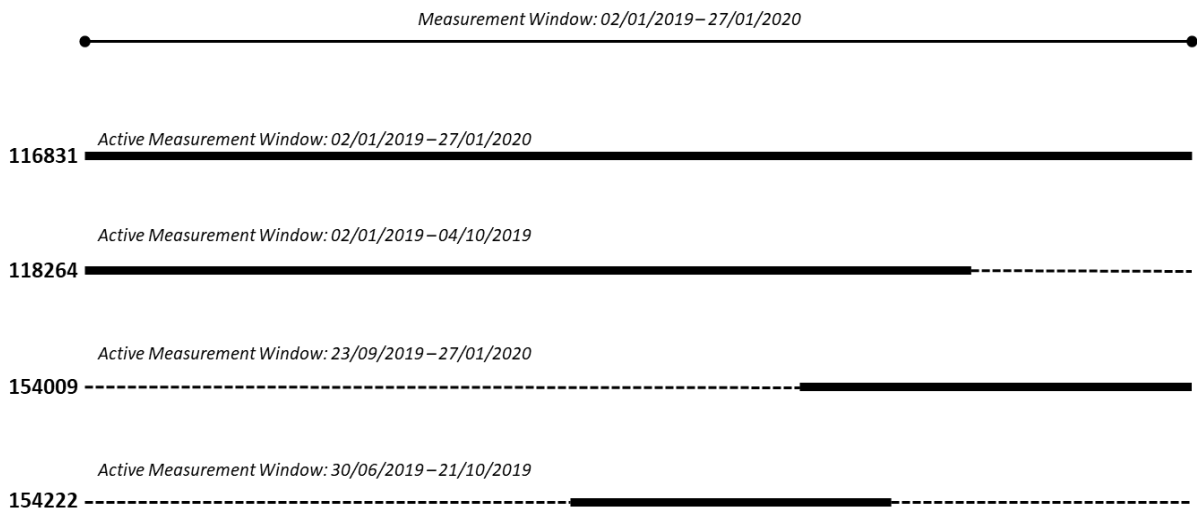
and required significant pre-processing prior to subsequent data analysis. The steps taken to transform the raw behavioural data into meaningful behavioural insights are discussed below.

In evaluating observed membership behaviour, research intended to assess attendance (and non-attendance) *only* during *active* periods of members' contracts. To facilitate this, non-attendance periods before contract commencement, or after contract termination, were disregarded. Each member possessed a unique contract period, with defined start and finish dates. Further, the potential for contractual lapses was accommodated in the measurement and analysis. It should be noted that contract periods may, of course, extend beyond the measurement window. Active contract periods fell into one of four mutually-exclusive archetypes within the measurement window (02/01/2019–27/01/2020):

- A contract active for the entire duration of the measurement window.
- A contract active at the beginning of the measurement window but terminated before the end of the measurement window.
- A contract activated during the measurement window, and active until the end of the measurement window.
- A contract activated during the measurement window but terminated before the end of the measurement window.

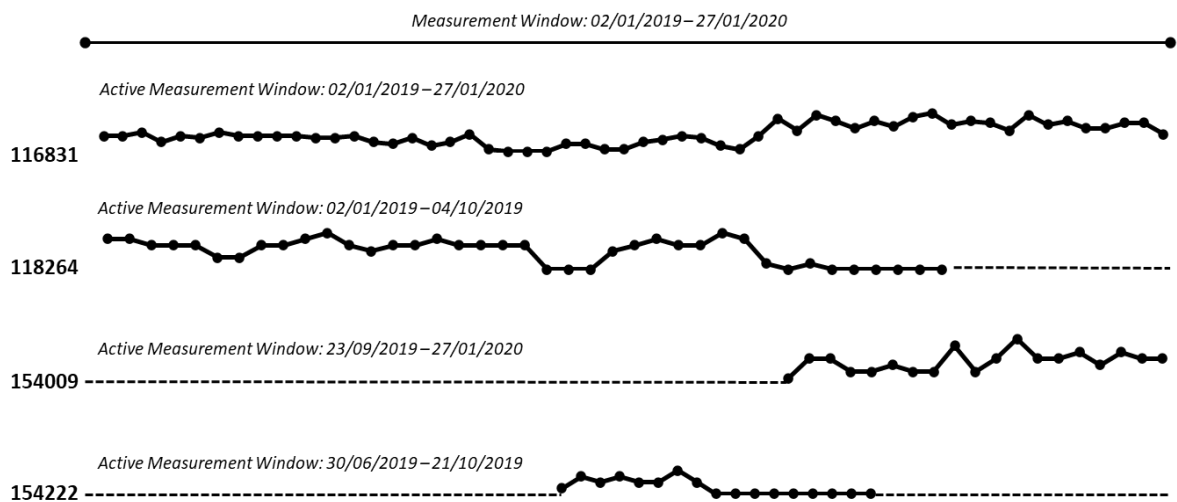
These four archetypes are illustrated in Figure 7.2, using actual deidentified customer contract periods within the measurement window as examples. Within the measurement window, a solid line indicates an active membership period, while a dotted line indicates the absence, or termination of a membership contract. Periods indicated through a dotted line were not used for the derivation of observed behaviour descriptive statistics, as they indicate non-active periods of membership.

Figure 7.2 Behavioural Data Cleaning: Contractual Lapses



Within active contract periods, members exhibited periods of non-attendance, or behavioural lapses. Using the same deidentified customer contracts, Figure 7.3 presents a weekly view of behaviour within active membership periods for some deidentified examples. This view demonstrates that within any given active membership period, members will exhibit differing behavioural patterns.

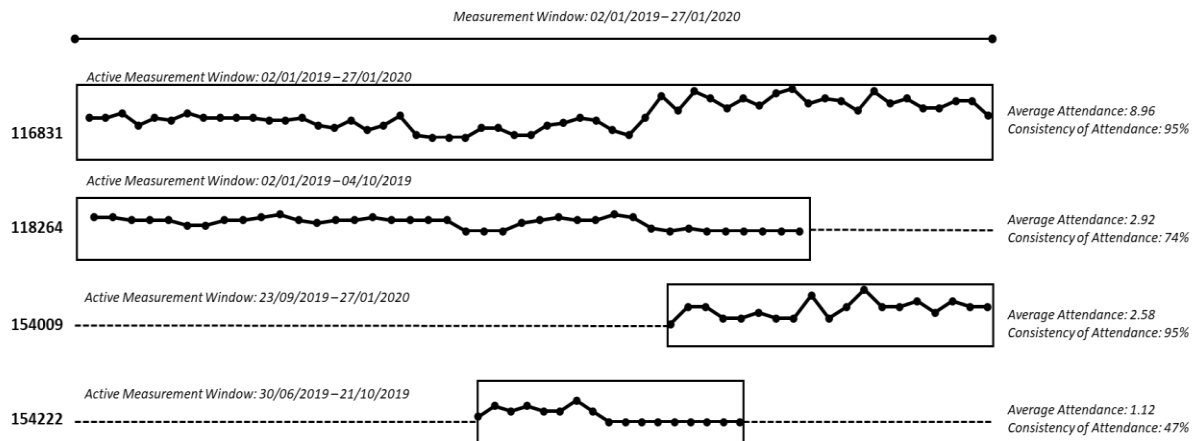
Figure 7.3 Behavioural Data Cleaning: Behavioural Lapses



Descriptive statistics were derived based upon the active contractual period for each member. These descriptive statistics included attendance frequency and attendance

consistency. An example of derived descriptive statistics is presented in Figure 7.4. This view demonstrates the period from which descriptive statistics were derived through encasement.

Figure 7.4 Behavioural Data Cleaning: Descriptive Statistics



Cleaning of raw behaviour data provided the behavioural constructs to be included in the structural models discussed below. For each member, a set of relevant, objective behavioural descriptive statistics was calculated. The derived behavioural data was analysed as a useful mechanism to explore the determinants of member retention.

7.3 Descriptive Statistics

As with previous research stages, the analysis involved evaluating the normality of behavioural data distributions, by examining skewness and kurtosis. This was completed as an additional precautionary step, given PLS-SEM results are robust to non-normal data (Cassel, et al., 1999; Hair, et al., 2012; Reinartz, et al., 2009). Because results indicated a non-normality of scores, a logarithmic transformation was performed on the attendance frequency variable. Following the log transformation, both behavioural variables – attendance frequency and attendance consistency – were found to be within the more stringent acceptance criteria of ± 2 for skewness and kurtosis. Table 7.2 shows the skewness and kurtosis results for each behavioural data variable assessed within Research Stage Three.

Table 7.2 Research Stage Three Skewness and Kurtosis

Questionnaire Item Label	N	Mean	Skewness	Kurtosis
Log Attendance Frequency	661	0.658	-1.040	1.753
Attendance Consistency	661	0.610	-0.452	-0.803

7.4 Structural Equation Modelling

Research Stage Three intended to explore attitudinal and behavioural determinants of member retention, uniquely evaluating the role of observed attendance behaviour. Previous analysis was conducted for the structural model assessing attitudinal variables and control variables, depicted in Figure 6.5. As with previous research stages, PLS-SEM was utilised to explore or confirm theory (Hair, et al., 2017a). Here, a PLS-SEM structural model was developed to investigate the relationships between observed attendance behavioural and member retention in a fitness facility context. Analysis is presented next, derived through the statistical software, SmartPLS.

7.4.1 Assessing the Measurement Model

The Research Stage Three structural model adds observed attendance behaviour to the model presented in Research Stage Two. Therefore, assessment of the reflective and formative constructs completed in Research Stage Two is maintained, as outlined in Section 6.7.1 and 6.7.2. For this stage of the research, we assessed the novel latent construct: observed attendance behaviour. Observed attendance behaviour fell within thresholds outlined for Cronbach's Alpha, Average Variance Extracted (AVE), and Composite Reliability (CR). These results are presented in Table 7.3.

Table 7.3 Research Stage Three PLS-SEM Measurement Model Results

Construct	Item						
Reflective Measures		Loading	Composite Reliability	AVE	Cronbach's α	Mean	Standard Deviation
Observed Behaviour	LOG10FREQ	0.961	0.975	0.952	0.950	0.658	0.429
	CONSIST	0.971				0.610	0.270

Assessment of *discriminant validity* for observed attendance behaviour was undertaken through the Heterotrait-Monotrait ratio of correlations (HTMT). Despite the addition of observed attendance behaviour, reflective measures remained acceptable, with results ranging from 0.051 – 0.798. Support for discriminant validity was provided through the HTMT analysis, presented in Table 7.4.

Table 7.4 Research Stage Three Data HTMT

	Attitudinal Loyalty	Behavioural Loyalty	Observed Behaviour	Outcome Quality	Process Quality	Retention	Satisfaction	Self-Efficacy	Value
Attitudinal Loyalty	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Behavioural Loyalty	0.448	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observed Behaviour	0.100	0.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Outcome Quality	0.361	0.254	0.116	0.000	0.000	0.000	0.000	0.000	0.000
Process Quality	0.611	0.297	0.051	0.441	0.000	0.000	0.000	0.000	0.000
Retention	0.124	0.314	0.359	0.071	0.095	0.000	0.000	0.000	0.000
Satisfaction	0.692	0.318	0.073	0.422	0.798	0.112	0.000	0.000	0.000
Self-Efficacy	0.157	0.167	0.148	0.485	0.214	0.078	0.184	0.000	0.000
Value	0.591	0.331	0.058	0.353	0.705	0.140	0.708	0.184	0.000

7.4.2 Common Method Bias Test: Structural Model

The new model was subjected to an additional common method bias test, evaluated through the Harman's Single Factor Test (Podsakoff, et al., 2003) and a full collinearity test (Kock, 2015). Results in Table 7.5 indicate that 31% of the variance in data is explained by the first factor. As with previous research stages, results of Harman's Single Factor Test suggested common method bias was not an issue. Further, variance inflation factors (VIFs) ranged between 1.068 and 3.178, adhering to the threshold value of 3.3 suggested by Kock (2015). Therefore, results of the full collinearity test also indicated an absence of common method bias within Research Stage Three. Results of the full collinearity test are presented in Table 7.6.

Table 7.5 Common Method Bias: Harman's Single Factor Test

Initial Eigenvalues				Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.741	31.077	31.077	12.741	31.077	31.077
2	4.661	11.368	42.444			
3	2.844	6.936	49.381			
4	2.398	5.849	55.230			
5	1.987	4.846	60.076			
6	1.626	3.967	64.042			
7	1.403	3.423	67.465			
8	1.279	3.120	70.585			
9	1.236	3.015	73.600			
10	1.090	2.659	76.258			
11	1.048	2.555	78.813			

Table 7.6 Common Method Bias: Collinearity Approach

	Attitudinal Loyalty	Behavioural Loyalty	Observed Behaviour	Outcome Quality	Process Quality	Retention	Satisfaction	Self-Efficacy	Value
Attitudinal Loyalty	0.000	2.042	2.232	2.223	2.232	2.234	1.899	2.230	2.193
Behavioural Loyalty	1.285	0.000	1.405	1.403	1.410	1.332	1.404	1.404	1.403
Observed Behaviour	1.187	1.175	0.000	1.187	1.183	1.068	1.187	1.174	1.187
Outcome Quality	1.470	1.484	1.356	0.000	1.469	1.486	1.458	1.246	1.484
Process Quality	2.266	2.279	1.248	2.254	0.000	2.014	1.900	2.255	2.157
Retention	1.236	1.168	1.116	1.238	1.238	0.000	1.238	1.238	1.234
Satisfaction	2.722	3.161	2.769	3.160	2.698	3.114	0.000	3.178	2.808
Self-Efficacy	1.231	1.223	1.209	1.082	1.235	1.227	1.238	0.000	1.224
Value	2.200	2.231	2.124	2.256	2.131	2.177	1.968	2.243	0.000

7.4.3 Assessing the Structural Model

Assessment of the role of observed attendance behaviour in explaining member retention built upon the assessment presented in Figure 6.5. As a result, attitudinal constructs and control variables, analysed in Section 6.7, were maintained from Research Stage Two. The subsequent analysis discussed the suitability of observed attendance behavioural variables (*average frequency and consistency*) in explaining member retention. This analysis was achieved through the coefficient of determination (R^2), effect size (f^2), the blindfolding-based cross validated redundancy measure (Q^2), and the standardised root mean square residual (SRMR). Metrics were examined in line with acceptance thresholds outlined in Section 4.8.3.1, and are presented in Table 7.6.

The models in-sample explanatory power was assessed via the coefficient of determination (R^2). For Research Stage Three this metric evaluated the amount of variability in member retention explained by its relationship with attitudinal variables and observed attendance behaviour variables (*average frequency and consistency*) in conjunction. The R^2 value of member retention, considering both attitudinal and observed attendance behaviour variables in aggregate, was interpreted as 18.7%. Previously, before the addition of observed attendance, recall that the R^2 was 11.5%, as discussed in Chapter 6. Therefore, the percentage of variance explained for member retention was enhanced by 7.2% when measuring observed attendance behaviour variables, as opposed to self-report attendance behaviour.

Evaluation of effect size indicated a significant, but small, effect for the relationship between self-efficacy and observed attendance behaviour ($f^2 = 0.020$), observed attendance behaviour and behavioural loyalty ($f^2 = 0.034$), and observed attendance behaviour and member retention ($f^2 = 0.097$). A non-significant effect size was interpreted for the relationship between observed attendance behaviour and attitudinal loyalty ($f^2 = 0.002$).

Furthermore, predictive relevance was supported through the Stone-Geisser's Q^2 value, where member retention was determined as $Q^2 = 0.172$.

Finally, interpretation of model fit occurred through the standardised root mean square residual (SRMR). The SRMR for Research Stage Three, considering both significant attitudinal variables and observed attendance behaviour variables in aggregate, was shown as 0.112. While results exceeded thresholds presented for good model fit, this was not deemed as concerning given lacking relevance of global model fit measures within PLS-SEM.

Table 7.7 Research Stage Three Data Measurement Model Results

Relationships	Path Coefficient	T Statistic	P Value	Bias Corrected 95% CI	f^2	q^2
<i>Control Measures</i>						
Gender → Retention	-0.006ns	0.175	0.861	[-0.077; 0.063]	0.000	-0.002
Age → Retention	-0.008ns	0.208	0.835	[-0.083; 0.073]	0.000	-0.002
Tenure → Retention	0.005ns	0.123	0.902	[-0.076; 0.084]	0.000	-0.002
<i>Measurement Model Constructs</i>						
Self-Efficacy → Observed Behaviour	0.148	3.685	0.000	[0.070; 0.227]	0.020	0.020
Observed Behaviour → Attitudinal Loyalty	0.049ns	1.573	0.116	[-0.014; 0.111]	0.005	0.002
Observed Behaviour → Behavioural Loyalty	0.197	5.205	0.000	[0.123; 0.272]	0.045	0.034
Observed Behaviour → Retention	0.305	7.617	0.000	[0.229; 0.385]	0.101	0.097

Note: ns refers to non-significant effects at the 0.05 level. All other effects significant at $p < 0.05$.

R^2 Value = 0.401; Satisfaction = 0.631; Self-Efficacy = 0.179; Observed Attendance Behaviour = 0.022; Attitudinal Loyalty = 0.481; Behavioural Loyalty = 0.139; Retention = 0.187. Q^2 Value = 0.368; Satisfaction = 0.536; Self-Efficacy = 0.146; Observed Attendance Behaviour = 0.020; Attitudinal Loyalty = 0.426; Behavioural Loyalty = 0.111; Retention = 0.172. Effect size f^2 is interpreted in line with Cohen (1988): 0.35 (large), 0.15 (medium), 0.02 (small), and Henseler, et al. (2009) for predictive relevance q^2 : 0.35 (large), 0.15 (medium), and 0.02 (small).

7.4.4 Direct, Indirect and Total Effects

An evaluation of the path model intends to decompose the influences of one variable on another in total, direct and indirect effects (Bollen, 1987). As the structural model has been

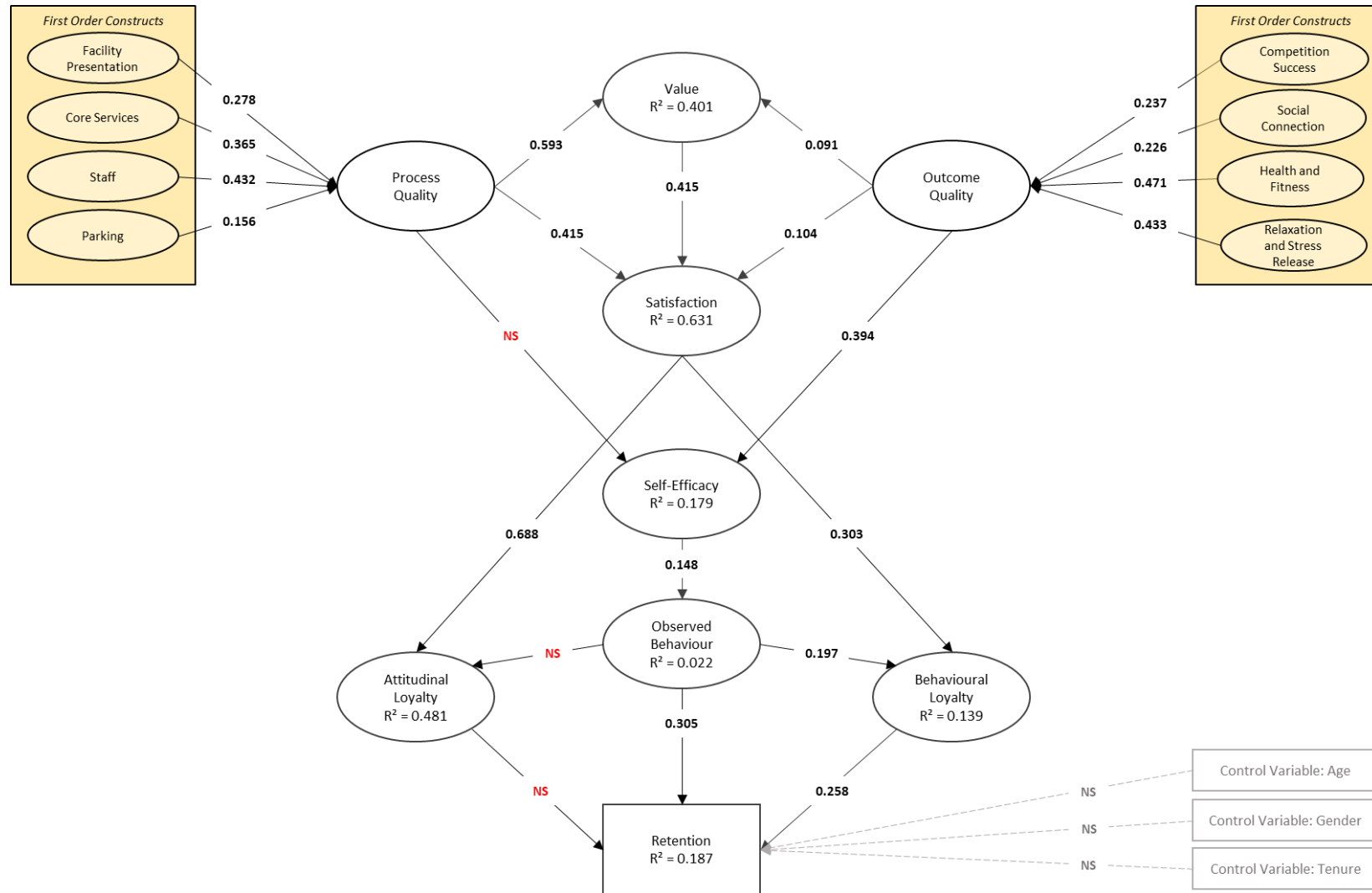
largely replicated from Research Stage Two, an assessment of the direct, indirect, and total effects was presented in Section 6.7.6.

Despite previous evaluation, the unique addition of observed attendance behaviour in Research Stage Three necessitates the need to evaluate the direct, indirect, and total effects of observed attendance behaviour on loyalty indicators and member retention. This evaluation depicted observed attendance behaviour as having the highest significant total effect on retention (0.355). Consequently, the results suggest that observed attendance behaviour is a key determinant of member retention and is more effective as an indicator when compared to self-reported attendance behaviour (as evaluated in Research Stage Two). The results of the inner model effects analysis for Research Stage Three are presented in Table 7.8.

Table 7.8 Research Stage Three Inner Model Effects (PLS-SEM)

Path	Direct	Indirect	Total
Self-Efficacy → Observed Behaviour	0.148	0.000	0.148
Observed Behaviour → Attitudinal Loyalty	0.049	0.000	0.049
Observed Behaviour → Behavioural Loyalty	0.197	0.000	0.197
Observed Behaviour → Retention	0.305	0.050	0.355
Attitudinal Loyalty → Retention	-0.021	0.000	-0.021
Behavioural Loyalty → Retention	0.262	0.000	0.262

Figure 7.5 Research Stage Three Structural Model



Note: We used a bootstrapping routine (Hair, et al., 2017a) with 5000 subsamples, and a no sign change option to determine the significance of the path coefficients

7.5 Discussion

Research Stage Three developed and tested measurement and structural models to address the research question: how does observed attendance behaviour enhance the explanation of member retention in a fitness facility context? Specifically, attitudinal variables and observed attendance behaviour were assessed concurrently to enhance understanding of member retention. Below, the findings and implications are presented. *First*, a short review of this stage is presented. *Second*, structural model results are discussed in relation to research hypotheses. *Third*, outcomes and contributions to sport and leisure management are supported. While specific results corresponding to Research Stage Three are discussed next, a detailed synthesis of all discussion follows in later chapters.

7.5.1 Research Stage Three: Overview

Research Stage Three provided a structural model with enhanced suitability for explaining member retention in a fitness facility context. This enhancement was driven through evaluation of *both* attitudinal survey constructs collected in Research Stage Two *and* observed attendance behaviour collected in Research Stage Three. Integration and assessment of observed attendance behaviour was a novel contribution of research, exported from the partner organisation's data management system.

The structural model was shaped by previous findings, investigating a single fitness facility managed by the partner organisation. Data analysis was pursued through a Partial Least Squares Structural Equation Model (PLS-SEM). The methods used tested the structure of constructs, hypothesised relationships, and supported validity and reliability. This analysis was outlined in Section 7.4.

Overall, findings supported the merit of *both* attitudinal data and observed attendance behaviour as useful for explaining member retention. Specifically, findings supported the notion that observed attendance behaviour and behavioural loyalty are positive, direct, and significant drivers of member retention. A discussion of construct relationships is presented next, in line with research hypotheses corresponding to Research Stage Three.

7.5.2 Research Stage Three: Hypothesis Testing

The Research Stage Three structural model (Figure 7.5) sought to examine to which the extent attitudinal data variables (*process quality, outcome quality, value, satisfaction, self-efficacy, attitudinal loyalty and behavioural loyalty*) and observed attendance behaviour explain member retention in a fitness facility context. These hypothesised relationships are summarised in Table 7.9.

Table 7.9 Research Stage Three Hypothesis Testing

	Relationships	Path Coefficient	T Statistic	P Value	Bias Corrected 95% CI	f²	q²	Decision
H13	Self-Efficacy → Observed Behaviour	0.148	3.685	0.000	[0.070; 0.227]	0.020	0.020	Support
H14	Observed Behaviour → Attitudinal Loyalty	0.049 <i>ns</i>	1.573	0.116	[-0.014; 0.111]	0.005	0.002	Reject
H15	Observed Behaviour → Behavioural Loyalty	0.197	5.205	0.000	[0.123; 0.272]	0.045	0.034	Support
H16	Observed Behaviour → Retention	0.305	7.617	0.000	[0.229; 0.385]	0.101	0.097	Support

Note: *ns* refers to non-significant effects at the 0.05 level. All other effects significant at $p < 0.05$.

R^2 Value = 0.401; Satisfaction = 0.631; Self-Efficacy = 0.179; Observed Attendance Behaviour = 0.022; Attitudinal Loyalty = 0.481; Behavioural Loyalty = 0.139; Retention = 0.187. Q^2 Value = 0.368; Satisfaction = 0.536; Self-Efficacy = 0.146; Observed Attendance Behaviour = 0.020; Attitudinal Loyalty = 0.426; Behavioural Loyalty = 0.111; Retention = 0.172.

Effect size f^2 is interpreted in line with Cohen (1988): 0.35 (large), 0.15 (medium), 0.02 (small), and Henseler, et al. (2009) for predictive relevance q^2 : 0.35 (large), 0.15 (medium), and 0.02 (small).

H13: Self-efficacy has a direct, positive effect on observed attendance behaviour.

Hypothesis 13 proposed a direct, positive effect of self-efficacy on observed attendance behaviour. A positive path coefficient of 0.148, p-value of 0.000 and small effect size of 0.020 was determined. Hypothesis 13 is therefore accepted, supporting a statistically significant role of self-efficacy in explaining observed attendance behaviour.

H14: Observed attendance behaviour has a direct, positive effect on attitudinal loyalty.

Hypothesis 14 proposed a direct, positive relationship between observed attendance behaviour and attitudinal loyalty. Results of the structural model demonstrated a non-significant relationship, shown through a path coefficient of 0.049, p-value of 0.116, and non-significant effect size of 0.002. The rejection of Hypothesis 14 suggests that observed attendance behaviour does not directly contribute to the intention to recommend in a fitness facility context.

H15: Observed attendance behaviour has a direct, positive effect on behavioural loyalty.

Hypothesis 15 proposed a direct, positive effect of observed attendance behaviour on behavioural loyalty. The analysis of this relationship demonstrated a positive path coefficient of 0.197, significant p-value of 0.000, and small effect size of 0.045. It is therefore supported that observed attendance behaviour is positively related to the intention to renew or continue membership in a fitness facility context.

H16: Observed attendance behaviour has a direct, positive effect on retention.

Hypothesis 16 proposed a direct, positive effect of observed attendance behaviour on member retention. Estimation results indicated a significant path coefficient of 0.305, p-value

of 0.000, and small effect size of 0.097. Hypothesis 16 is therefore accepted. The findings suggest that observed attendance behaviour is a direct determinant of member retention in a fitness facility context.

7.5.3 Research Stage Three: Discussion

Research Stage Three intended to investigate RQ3: *How does observed attendance behaviour enhance the explanation of member retention in a fitness facility context?* Whilst this was explored through the testing of the four hypotheses addressed in Section 7.5.2, we now turn to a discussion of the broader implications. Key findings and corresponding implications are discussed distinctly as: Attitudinal Constructs (Section 7.5.3.1), Observed Attendance Behaviour (Section 7.5.3.2), and Member Retention (Section 7.5.3.3).

7.5.3.1 Attitudinal Constructs

Research Stage Two attitudinal constructs are common to Research Stage Three with outcomes in line with previous findings. Specifically, attitudinal constructs were asserted as enhancing explanation of member retention. Despite a common use of attitudinal data to measure attitudes and perceptions in leisure contexts (e.g., Avourdiadou & Theodorakis, 2014; Bitner, et al. 2008; Howat & Assaker, 2016; Kwan & Bryan, 2010; Zeithaml, et al., 1996), analysis of member retention in this research provides novel insight. Specifically, while the majority of constructs and their relationships remained unchanged, the unique addition of observed attendance behaviour necessitated a revised assessment of self-efficacy and distinct loyalty constructs.

Self-efficacy, as a cognitive process of SCT, was supported as a significant driver of observed attendance behaviour. However, while significant, modelled constructs explained only 2.2% of the total variance in observed attendance behaviour. Therefore, while broadly

findings were akin to Research Stage Two, sequential modelling depicted a reduction of explanatory power. Specifically, the explanatory power of self-efficacy decreased by 5% for observed attendance behaviour examined in Research Stage Three, as opposed to self-reported attendance behaviour examined in Research Stage Two. Disparity suggests a stronger correlation between self-efficacy and subjective self-report attendance, compared to objective observed behaviour. This distinction poses valuable implications where previous exploration in sport and leisure contexts has largely considered self-efficacy *only* for explaining self-reported behaviour (e.g. Sallis, et al., 1992; Sharma & Sargent, 2005; Strachan, et al., 2005), and not observed behaviour. Further, these findings are useful from an SCT perspective, shaping understanding of the reciprocal nature of individual and behavioural influences. Overall, novel capture of the role of self-efficacy in explaining observed attendance behaviour enhances understanding. Findings propose that while an understanding of self-efficacy is necessary to evaluate the reciprocal nature of member attitudes and perceptions, this is less effective when explaining objective observed behaviour. Such understanding is especially relevant where behaviour change and member retention outcomes are sought in a fitness facility context.

The inclusion of observed attendance behaviour as a unique addition necessitated revised interpretation of loyalty antecedents and consequences. While many antecedent relationships remained unchanged, the addition of observed attendance behaviour saw a decreased level of explained variance for behavioural loyalty and attitudinal loyalty. Specifically, evaluation of observed attendance behaviour – substituting self-reported attendance behaviour – reduced the ability for modelled constructs to explain behavioural loyalty by 0.8% and resulted in a non-significant relationship between observed attendance behaviour and attitudinal loyalty. These findings contrast with those of Research Stage Two

and suggest objective observed behaviour is a less effective determinant of subjective loyalty constructs, compared to subjective self-reported behaviour.

Further, Research Stage Three reassessed the role of distinct loyalty constructs for delineating member retention. *Firstly*, the significant role of behavioural loyalty in explaining member retention was maintained. Interpretation of this relationship corresponds with Research Stage Two, as well as previous research in related sport contexts (McDonald, 2010; McDonald et al., 2014). Considering direct determinants, behavioural loyalty was the most crucial attitudinal construct for intervention when seeking to improve (prediction of) member retention. *Secondly*, while novel inclusion of observed attendance behaviour impacted the derived relationship significance for explaining attitudinal loyalty, this did not alter the role of attitudinal loyalty for delineating member retention. Parallel to previous research stages, attitudinal loyalty did not significantly contribute to retention of members. Overall, while antecedent relationships saw some shifts, the distinct role of loyalty constructs for delineating member retention was largely unchanged from previous research stages. Findings support prioritisation of behavioural loyalty above attitudinal loyalty, when addressing member retention in a fitness facility context.

Broadly, Research Stage Three supported the role of attitudinal constructs in explaining member retention. While attitudinal construct relationships were largely unchanged from Research Stage Two, novel integration of observed attendance behaviour necessitated reconsideration of the role of self-efficacy and distinct loyalty constructs. For the role of self-efficacy in explaining observed attendance behaviour, and observed attendance behaviour in explaining behavioural loyalty, a reduced relationship strength was determined. Further, a non-significant relationship between observed attendance behaviour and attitudinal loyalty was shown. Overall, while some variation from previous research stages was evident,

the direct role of distinct loyalty constructs for delineating member retention remained unchanged. Key implications are drawn from the assertion of behavioural loyalty as a direct determinant of member retention in a fitness facility context.

7.5.3.2 Observed Attendance Behaviour

Integration and assessment of observed attendance behaviour is a novel contribution of Research Stage Three. Findings provide insight that validates the role of observed attendance behaviour as significant in explaining behavioural loyalty and member retention. Through an SCT lens, the use of observed behaviour enhanced understanding of member retention and its determinants. Further, the utility of behavioural data was supported, emphasising the need to prioritise its collection and evaluation to effectively assess member retention in fitness facility contexts.

Measurement of observed attendance behaviour was established through two behavioural scale items: attendance frequency and attendance consistency. While both items positively contributed to observed attendance behaviour, a logarithmic transformation was necessary for attendance frequency due to high levels of kurtosis. This transformation is posited as reasonable, given attendance frequency is not a measure of sustained or maintained attendance, and therefore any member may exemplify attendance peaks and lulls. Non-normal distribution poses important considerations, contending the use of *only* attendance frequency to evaluate the complexities of member behaviour (e.g. Duncan, et al., 2005; San Emeterio, et al., 2016, Yi, et al., 2020). Aiding conceptualisation, attendance consistency was akin to previous work (McDonald, 2010), and posed no skewness and kurtosis issues. Absence of data normality issues supported attendance consistency as an appropriate and useful item for measuring observed attendance behaviour. Overall, the relative impact of observed attendance behaviour was validated, supporting significant measurement through

both frequent and regular attendance. Validation of observed attendance behaviour measurement informs research, providing a greater capture of items necessary to explain attendance and member retention behaviour.

The utility of observed attendance behaviour was supported as significant in explaining behavioural loyalty and member retention within Research Stage Three. As the role of observed attendance behaviour for explaining behavioural loyalty was noted within Section 7.5.3.1, focus is given here to the relationship with member retention. Considering all measured constructs, findings propose observed attendance behaviour – representing behavioural influences of SCT – as having the greatest power when explaining member retention. This necessitates a view of behaviour as a cause – as well as an outcome or affect – in sport and leisure contexts. Furthermore, the explained variance in member retention increased by 7.2% when modelling observed attendance behaviour, as opposed to self-reported attendance behaviour assessed in Research Stage Two. This distinction supports a superior ability of behavioural data to delineate member retention, compared to attitudinal data. Findings, therefore, propose a transition away from the dominant use of attitudes and intentions (Ostrom et al., 2015), and suggest preferential collection and evaluation of behavioural data to effectively assess member retention. The utility of observed attendance behaviour substantiates behavioural data use in a breadth of research areas.

Research Stage Three supported the significant role of observed attendance behaviour in explaining behavioural loyalty and member retention. Conceptualisation determined attendance frequency and consistency as contributing significantly to the observed attendance behaviour construct. Overall, the utility of observed attendance behaviour poses a fundamental shift toward the preferential use of behavioural data to derive member retention and intervention.

7.5.3.3 Member Retention

Findings provided a concurrent assessment of attitudinal and behavioural determinants of member retention. This is valuable where, despite previous research asserting the importance of loyalty, satisfaction, service quality, and behaviour distinctly, clarity of their role in explaining member retention has not been sufficiently addressed in a fitness facility context. Broadly, exploration distinguished member retention as a loyalty outcome and improved understanding of key direct and indirect relationships.

Research Stage Three validated a conceptual and empirical distinction of loyalty and retention. Support for the direct role of behavioural loyalty in explaining member retention clarifies construct positioning, asserting member retention as an outcome of loyalty. This view is in line with previous postulation (e.g. Dawes, 2009; East, et al., 2005). Further, an inability to support attitudinal loyalty as a determinant of member retention suggests a clear distinction. Such distinction is vital where financial viability of fitness facilities relies heavily on the revenue provided by ongoing collection of membership fees. Therefore, member retention, as a binary variable depicting the decision to continue or cancel, presents the greatest determinant of future profitability. Overall, findings propose that intervention addressing the financial viability of fitness facilities must prioritise retention as an outcome of loyalty and supports that loyalty and retention cannot be viewed as equivalent in a fitness facility context.

In summary, all structural model constructs, with the exception of attitudinal loyalty, were shown to be important determinants of member retention. Concurrent measurement and evaluation of attitudinal and behavioural constructs is a novel contribution of research and substantiates a number of direct and indirect relationships explaining member retention. Behavioural loyalty and observed attendance behaviour were supported as direct drivers of

retention with results advancing empirical understanding of retention and informing practical implications for intervention design within the sport, fitness, and leisure industries.

Additionally, indirect relationships are proposed. Findings support that process quality, outcome quality, value, satisfaction, and self-efficacy play an indirect role in explaining member retention. Indirect relationships propose that those attitudes and perceptions related to fitness facility engagement should be addressed to adequately develop, and explain, member retention. The culmination of direct and indirect construct relationships explained 18.7% of the variance in member retention, supporting the utility of this exploration. Overall, findings provided a greater insight into the direct, and indirect role of attitudinal and behavioural constructs for delineating member retention, with practical implications. By providing a reliable and valid measurement tool for member retention, fitness facilities are encouraged to design and evaluate their service performance and develop intervention that addresses ongoing financial viability.

7.6 Chapter Summary

Research Stage Three analysis detailed the measurement model constructs and relationships, as well as reliability and validity testing to support suitable inclusion of constructs in the structural model. Investigation of the role of attitudinal and behavioural constructs was conducted using Partial Least Squares Structural Equation Modelling (PLS-SEM). The final structural model was presented in Figure 7.5, and discussed in Section 7.5.3.

A number of findings implicit within Research Stage Three assist in interpreting the overarching research question: *How does observed attendance behaviour enhance the explanation of member retention in a fitness facility context?* Uniquely, the integration of observed attendance behaviour enhanced understanding of a number of relationships between constructs. Self-efficacy was supported as a significant determinant of observed attendance

behaviour (H13). This finding is useful from an SCT perspective, shaping understanding of reciprocal determinism. Further, the role of observed attendance behaviour was supported for explaining behavioural loyalty (H15) and rejected for explaining attitudinal loyalty (H14). Broadly, objective observed behaviour was asserted as a less effective determinant of subjective loyalty constructs, compared to subjective self-reported behaviour. Finally, the role of observed attendance behaviour was determined as significant for delineating member retention (H16). The strength of this relationship depicts the utility of behavioural data and poses that the collection and evaluation of behavioural data should be prioritised where intervention seeks to improve member retention. Overall, structural model constructs were shown to be useful in understanding member retention in a fitness facility context. Particularly, observed attendance behaviour and behavioural loyalty were supported as direct, and significant drivers of member retention. Findings derived through Research Stage Three have valuable implications for sport and leisure theory and management, which are developed in the next chapter.

CHAPTER 8: CONCLUSION

8.1 Introduction

This research has made contributions to the development of theory-based tools and processes that further the current understanding of member retention in fitness facilities. Specifically, the research has provided a better understanding of the relationships between Social Cognitive Theory (SCT) influences, loyalty indicators, and member retention. This analysis was driven by the need for further examination of user experiences, exercise maintenance, and facilitation, and was motivated by the complex relationships between member engagement and fitness services. To gain a better understanding of related constructs and their impact on loyalty outcomes, this research utilised two distinct quantitative data sources: multiple online questionnaires distributed as a measure of self-reported attitudinal data, and behavioural data exported from the fitness facility's data management system.

The data enabled the proposal and testing of structural models that investigated constructs and hypothesised relationships. Structural model relationships were supported in every research stage, with some exceptions. The resulting framework provided a theoretical and practical foundation to better understand member retention, offering the capability to validate and extend components from past work, as well as refine, test, and measure the role of SCT influences and loyalty in developing members' ongoing engagement.

In this chapter, empirical results are presented and examined in sum. While a detailed discussion of results and hypotheses has been presented for each research stage in Chapter 5–7, the following provides an overview which collates findings across research stages (Section 8.2.1 to 8.2.7). Following this, theoretical implications (Section 8.3), practical contributions to fitness facility management (Section 8.4), and limitations and opportunities for future research (Section 8.5) are presented.

8.2 Collective Summary of Research Findings

Findings of this research contribute towards an understanding of member retention in two dimensions – attitudinal determinants and behavioural determinants – which have not, to date, been reconciled in existing literature. To succinctly represent findings, a summary of key contributions from each of three distinct research stages is provided.

Research Stage One validated four lower-order process quality and four lower-order outcome quality dimensions specific to the Fitness Industry. Aligning with previous research (Howat & Assaker, 2016), the higher-order process quality construct was supported as an antecedent of loyalty mediated by overall satisfaction. As an addition, key constructs were tested for impact on member retention, extending the conceptual model offered by Howat and Assaker (2016). Most notably, empirical results do not support a one-dimensional view of loyalty as a significant determinant of member retention.

Research Stage Two found evidence supporting the integration of SCT influences and contributed to an improved understanding of multi-dimensional member loyalty and member retention. Self-reported attendance behaviour and behavioural loyalty were validated by the empirical results as significant determinants of member retention, explaining 11.5% of construct variance. Finally, *Research Stage Three* supported a significant, positive, and direct relationship between observed attendance behaviour and member retention. The use of observed attendance behaviour enhanced the ability to explain member retention in comparison with self-reported attendance behaviour, explaining 18.7% of the variance in member retention. While not discounting attitudinal data, findings emphasise the need to prioritise behavioural data to effectively assess member retention. In sum, the inclusion of an SCT understanding, multi-dimensional conceptualisation of loyalty and observed attendance behaviour improves explanation of member retention.

In addition to the above summary of research, it is important to delineate the contributions of distinct constructs. While discussion within Chapters 5–7 defined these roles as per distinct research stages and hypotheses, Sections 8.2.1 to 8.2.7 provide a collective summary of findings across research stages. Aligned with Chapter 2, these sections are presented as member retention, exercise behaviour, self-efficacy, customer loyalty, perceived value, satisfaction, and Social Cognitive Theory (SCT).

8.2.1 Member Retention

Member retention and its determinants were explored and explained progressively throughout the three stages of structural modelling. *First*, an initial replication and extension of Howat and Assaker's (2016) model provided limited support of the ability of hypothesised constructs to explain member retention in a fitness facility context. Specifically, modelled constructs explained only 1% of the total variance in member retention. *Second*, the integration of SCT influences and a multi-dimensional conceptualisation of loyalty enhanced explanation of member retention. The structural model presented in Research Stage Two supported the hypotheses that self-reported attendance behaviour and behavioural loyalty were direct determinants of member retention, explaining 11.5% of the total variance in member retention. *Finally*, research supported the hypothesised relationship significance between observed attendance behaviour and member retention. When adding observed attendance behaviour, 18.7% of the total variance in member retention could be explained by modelled constructs, either directly or indirectly. Specifically, behavioural loyalty and observed attendance behaviour were supported as direct determinants, while process quality, outcome quality, value, satisfaction, and self-efficacy all played an indirect role in explaining member retention. Further, all research stages determined a non-significant relationship between attitudinal loyalty and member retention. *Overall*, findings showed the development

and role of behavioural loyalty and utility of member behaviours as indicators of member retention that are critical and that serve valuable theoretical and managerial implications.

8.2.2 Exercise Behaviour

The utility of member attendance behaviour was supported, with findings allowing a comparison of the effectiveness of self-reported and observed attendance behaviour in explaining member retention. This comparison determined the explained variance in member retention as increasing by 7.2% when modelling observed attendance behaviour, as opposed to of self-reported attendance behaviour. Findings therefore demonstrate an enhanced explanatory power of observed attendance behaviour for delineating member retention, with important theoretical and managerial implications.

8.2.3 Self-Efficacy

Self-efficacy was evaluated to facilitate the integration of SCT influences. Findings supported the hypothesised role of self-efficacy as related to both self-reported attendance behaviour and observed attendance behaviour. Sequential modelling enabled comparison of these relationships across research stages. This indicated the explanatory power as decreasing by 5% for observed attendance behaviour, as opposed to self-reported attendance behaviour. This means that self-efficacy plays a greater role in explaining subjective self-report attendance behaviour, compared with objective observed attendance behaviour. Closer correlation between self-report variables, as opposed to between self-report and behavioural variables, has meaningful implications for theory and practice. This is especially relevant where behaviour change is sought.

8.2.4 Loyalty

The findings of this research enhance understanding of loyalty antecedents and consequences in a fitness facility context. Satisfaction and attendance behaviours were direct determinants of both attitudinal loyalty and behavioural loyalty. While hypothesised relationships were unanimously supported, greater explanatory power was evident for the relationship between satisfaction and attitudinal loyalty, as opposed to behavioural loyalty. Distinction informs the critical nature of satisfaction for delineating attitudinal loyalty, more so than for behavioural loyalty. Further, while the role of self-reported attendance behaviour was significant for explaining attitudinal loyalty and behavioural loyalty in Research Stage Two, observed attendance behaviour was only significant for explaining behavioural loyalty, not attitudinal loyalty, in Research Stage Three. This means that subjective self-report attendance behaviour plays a significant role in explaining attitudinal loyalty, while objective observed behaviour does not. A clear distinction of explanatory power for like determinants supports the view that attitudinal loyalty and behavioural loyalty are not equivalent, and therefore should not be viewed or evaluated as such. Overall, distinction of explanatory power suggests that a multi-dimensional conceptualisation of loyalty in a fitness facility context is optimal, and indeed, may be necessary.

Summarising loyalty consequences or outcomes, only behavioural loyalty was directly, positively, and significantly related to member retention. A non-significant relationship was determined between attitudinal loyalty and member retention at each research stage. The superior role of behavioural loyalty for delineating member retention poses important implications for academics and practitioners. Overall, findings provide a new understanding of the role of multi-dimensional loyalty constructs for explaining member retention in a fitness facility context.

8.2.5 Perceived Value

Our empirical results supported the significant role of value. While not a central research theme, perceived value was replicated from the Howat and Assaker (2016) framework. In delineating value, process quality and outcome quality were asserted as direct determinants, explaining 40.1% of the variance in perceived value within Research Stage Three. Further, the role of perceived value was determined as a direct, positive, and significant determinant of satisfaction, and as indirectly related to attitudinal loyalty, behavioural loyalty, and member retention. Overall, findings provide insight to the role of value perception, akin to that supported within past research (Howat & Assaker, 2016), and develop understanding of the role of value in explaining member retention.

8.2.6 Satisfaction

The role of satisfaction, while not a central research theme, was critical in shaping the replication of the Howat and Assaker (2016) framework. Akin to past work (Howat & Assaker, 2016), process quality and value were supported as direct determinants of satisfaction. While a non-significant relationship was determined between outcome quality and satisfaction in Research Stage One, revision of the satisfaction questionnaire instrument resulted in a direct, positive, and significant relationship in subsequent research stages. Overall, determinants culminated to explain 63.1% of the variance in satisfaction in Research Stage Three. Further, while direct relationships between satisfaction and loyalty have been discussed prior, an indirect relationship between satisfaction and member retention, mediated by behavioural loyalty, is noteworthy. This indirect relationship supports the need to improve member satisfaction to adequately develop and explain member loyalty and retention in a fitness facility context. The utility of member satisfaction for explaining member loyalty and retention poses theoretical and managerial implications.

8.2.7 Social Cognitive Theory

Findings supported the role of SCT influences in enhancing explanation of member retention, and its determinants, in a fitness facility context. This is discussed below, as relevant to individual, environmental, and behavioural influences.

Individual influences of SCT, depicted primarily as outcome quality, play a significant role in explaining value, satisfaction, and self-efficacy. In particular, the strength of the relationship between outcome quality and self-efficacy validates their dual classification as individual influences and supports reciprocal determinism. Reciprocal determinism was additionally supported through the relationship between self-efficacy and behavioural influences. Such relationships suggest that SCT influences cannot be evaluated separately, and do not influence behaviour in isolation. Further, these relationships, as well as an indirect pathway to member retention, support a multi-dimensional approach to service quality conceptualisation. Overall, findings validated the role of individual influences and the need to consider and enhance these in a fitness facility context.

Environmental influences of SCT, primarily depicted as process quality, demonstrated a significant relationship with value and satisfaction. Conversely, findings failed to support the role of process quality as significant in explaining self-efficacy. Validation of process quality, distinctly, supports the need to assess service quality as a multi-dimensional construct. Overall, while environmental influences have an indirect pathway to member retention, findings suggest a less critical and less active role through the lens of reciprocal determinism.

Behavioural influences of SCT were supported as direct and significant determinants of behavioural loyalty and member retention. Such relationships support the value of viewing behaviour as not merely an outcome, but also a cause of behaviour. Generally, the inclusion

of behavioural influences enhanced the suitability of the model for explaining member retention. This poses valuable practical and managerial implications, where retention is imperative for the financial viability of fitness facilities.

Overall, inclusion of specific SCT influences provided a greater capture of constructs, and construct relationships, which stimulate exercise maintenance and facilitation in a fitness facility context.

8.3 Theoretical Implications

The findings of this research have multiple important theoretical implications. While implications for sport and leisure are considered first and foremost, the novelty of some findings will likely prove that the theoretical implications will be applicable more widely. The research findings support the utility of self-reported attendance behaviour, observed attendance behaviour, and behavioural loyalty as direct determinants of member retention, and provide evidence for a fundamental shift prioritising the collection and evaluation of behavioural data to delineate retention behaviour.

8.3.1 Member Retention

This research represents a comprehensive attempt to explain member retention behaviour, building on past work that has primarily focussed on attitudes or intentions. While previous postulation supports satisfaction (Gonçalves & Diniz, 2015; Gonçalves, et al., 2016), loyalty (Finn, et al., 2009; Keiningham, et al., 2007; Reichheld, 2003), and frequent and regular attendance (Duncan, et al., 2005; McDonald, 2010; San Emeterio, et al., 2016, Yi, et al., 2020) as indicative of retention, these joint relationships have not been captured empirically in a sport and leisure context. Thus, the findings have significant implications for sport and leisure studies theory. Specifically, this research extends existing knowledge by empirically

validating self-reported attendance behaviour, observed attendance behaviour, and behavioural loyalty as significant, and direct determinants of member retention in a fitness facility context. Further, the proposal of key service quality and satisfaction constructs as indirect drivers of member retention has previously been under theorised. Overall, the support of behaviours and behavioural loyalty as determinants of member retention is an advance of research, where existing theory concerning member retention in a fitness facility context was underdeveloped.

Further, while supporting the merit and use of attitudinal constructs, this research emphasises a need to prioritise behavioural data to effectively assess member retention. Prioritising the collection and evaluation of behavioural data is substantiated where loyalty indicators were shown not to unanimously explain member retention in a fitness facility context. This transition corresponds with previous research, which challenges the value of attitudes and intentions as predictors of actual behaviours (Baker, et al., 2018; Katz, et al., 2020; Zaharia, et al., 2016). Therefore, a fundamental shift is posed toward behavioural data as preferential to provide a robust framework from which to derive member retention and intervention.

8.3.2 Exercise Behaviour

A primary contribution of this research is the exploration and confirmation of relationships between constructs of exercise behaviour and member retention. Specifically, this research empirically validated the significant, direct role of both self-reported attendance behaviour and observed attendance behaviour in explaining member retention. This assertion supports the role of behavioural influences as not merely an outcome, but also a cause of behaviour facilitation and maintenance. While it has been postulated within sport research that the most obvious way to predict future behaviour is to review past behaviour (Katz et al., 2020;

McDonald, 2010), this is underdeveloped more specifically within leisure services or fitness facility studies. Therefore, deeper consideration of the role of behaviour patterns and past behaviour is an important contribution of this research. Overall, this research proposes that to improve the accuracy of member behaviour prediction and intervention design, behaviour must be viewed as both an outcome, as well as a cause, or effect.

Further, implications of this research support the enhanced explanatory power of behavioural data for delineating member retention, compared to attitudinal data. Specifically, through sequential assessment of self-reported attendance behaviour and observed attendance behaviour an advanced understanding of member retention behaviour is developed. The superior ability of observed attendance behaviour to explain member retention advocates for a transition away from the use of attitudes and intentions, which dominate existing theorisation (Ostrom et al., 2015). Discerning the value and applicability of observed attendance behaviour extends the options for conceptualisation and measurement within fitness facility contexts and substantiates the utility of behavioural data for use in a breadth of research areas.

8.3.3 Self-Efficacy

The insights from this research with regards to the role of self-efficacy for explaining member behaviour, have a number of implications for fitness facilities. Broadly, the findings support a reciprocal relationship between self-efficacy and subsequent exercise behaviour (Mcauley, et al., 2011). This suggests that behavioural influences may not be sufficient to influence behaviour if customers doubt their capabilities to successfully engage in exercise. However, existing exploration of the role of self-efficacy has largely considered only self-reported behaviour (e.g. Sallis, et al., 1992; Sharma & Sargent, 2005; Strachan, et al., 2005). This research provides a novel capture of the role of self-efficacy for explaining self-reported

behaviour *and* observed attendance behaviour. Specifically, while collectively positive and significant, these relationships should not be viewed as equivalent. A stronger relationship is determined between self-efficacy and self-reported attendance behaviour, compared to observed attendance behaviour. Disparity suggests a stronger association between self-efficacy and subjective self-reported behaviour, more so than objective behaviour. In short, it is proposed that, while an understanding of self-efficacy is necessary to evaluate the reciprocal nature of member attitudes and perceptions, this is less effective when explaining objective observed behaviour in a fitness facility context.

8.3.4 Loyalty

The utility of loyalty is supported through a multi-dimensional conceptualisation, with important theoretical implications. Findings empirically validate antecedents and consequences of distinct constructs of loyalty: attitudinal loyalty and behavioural loyalty. Such exploration is important where, broadly, loyalty indicators are only considered to be of value if they can be used to predict actual behaviour (East, et al., 2005).

Effective assessment of loyalty determinants is an important contribution as previous research has yet to agree on the interrelationship between critical drivers of loyalty (Li & Petrick, 2010). Specifically, while findings support satisfaction as a direct determinant of both attitudinal loyalty and behavioural loyalty, the role of behavioural influences was not unanimous for each distinct loyalty construct. Behavioural influences had a significant relationship with behavioural loyalty but was determined as having a negligible (*self-reported attendance behaviour*) or non-significant (*observed attendance behaviour*) relationship with attitudinal loyalty. In short, positive past attendance behaviour is not significantly associated with positive thoughts and favourable feelings expressed towards a fitness facility. This

finding has theoretical implications for future research, supporting the need to consider a multi-dimensional conceptualisation of loyalty.

Where the majority of previous sport and leisure customer research culminates in the assessment of attitudes and behavioural intentions, the current research extended to explore member retention as a *loyalty outcome*. This transition enhanced understanding of the nature and dimensionality of loyalty, highlighting clear separation as determinants of member retention. Specifically, behavioural loyalty was a direct driver of member retention, while attitudinal loyalty was not. Separation of loyalty dimensions, and their impact, has implications for the validation of the seminal work of the Howat and Assaker (2016). While a focus on attitudinal loyalty in previous work is valuable, the superiority of behavioural loyalty for explaining member retention suggests such focus provides an incomplete depiction of member loyalty. In particular, the broader significance of attitudinal loyalty is questioned, as loyalty indicators are of most value if they can be used to predict behaviours (East, et al., 2005). Overall, findings suggest that consideration of behavioural loyalty improves outcomes, and that the collection of attitudinal loyalty indicators should be tempered when delineating member retention behaviour.

The empirical findings of this research provide a developed understanding of loyalty and make a substantial theoretical contribution by examining the effectiveness of a multi-dimensional assessment of loyalty for explaining member retention. The use of a multi-dimensional conceptualisation of loyalty provides significant insight for leisure studies through its conceptualisation, measurement, and validation.

8.3.5 Perceived Value

Although outside of the scope of the original research questions, enhanced understanding of member value perception has theoretical implications within fitness facility contexts. Based

on past frameworks by Howat and Assaker (2013; 2016), value was assessed as an indirect influence on loyalty through satisfaction. While it is understood that it could be possible to model this relationship differently (e.g. satisfaction as an antecedent of value), value is broadly supported as an antecedent to satisfaction in many other studies (e.g. Cronin et al., 2000; Gallarza, et al., 2011; Howat & Assaker 2013; 2016; Li & Petrick, 2010). The results of this research added to the literature of member value perception, supporting the role of value as an antecedent of satisfaction and an indirect determinant of attitudinal loyalty, behavioural loyalty, and member retention. This interpretation provides a richer theoretical understanding of value. Future work may look to transition the supported relationship to investigate value as an outcome of satisfaction.

8.3.6 Satisfaction

While assessment of the satisfaction construct was critical to shape the replication of the Howat and Assaker (2016) framework, interpretation provided broader theoretical implications for scholars. In line with expectations, satisfaction is driven by a number of different experiences and perceptions. Current research supported past models (Howat & Assaker, 2016), asserting both process quality and outcome quality, as determinants of satisfaction. Furthermore, while the link between satisfaction and loyalty has been supported in sport and leisure contexts (e.g. Clemes, et al., 2011; Cronin, et al., 2000; Dagger, et al., 2007; Howat & Assaker, 2013; 2016), concurrent assessment of a multi-dimensional conceptualisation of loyalty provided novel insight. Akin to previous research, satisfaction is distinctly supported as a significant driver of willingness of recommend (e.g. Funk, et al., 2016; Howat, et al., 1999) and of behavioural intentions and loyalty (e.g. Funk, et al., 2016; Pedragosa & Correia, 2009; Yu, et al., 2014). However, while significant relationships were determined generally, satisfaction exhibited enhanced predictive power for attitudinal loyalty,

compared to behavioural loyalty. In other words, the role of satisfaction is greater for explaining member intention to recommend (*attitudinal loyalty*), compared to member intention to renew, or continue, their fitness facility membership (*behavioural loyalty*). Therefore, not only does this research provide further support for determinants of satisfaction, but it provides a richer theoretical understanding of the distinct role of satisfaction for explaining multiple dimensions of loyalty, concurrently, in a fitness facility context.

8.3.7 Social Cognitive Theory

Valuable theoretical implications are drawn from the integration of SCT. Integration refined, tested, and measured the role of SCT influences in developing members' ongoing engagement. This process supported the ability of individual, environmental, and behavioural influences of SCT to improve understanding and conceptualisation of member retention, service quality, and reciprocal determinism in fitness facility contexts.

Evaluation of SCT influences enabled an enhanced conceptualisation of member retention through both indirect and direct relationships. Specifically, an indirect relationship with member retention was supported for each construct depicting individual and environmental influences of SCT (outcome quality, self-efficacy, and process quality). Furthermore, consideration of behavioural influences enhanced the suitability of the model for explaining member retention through a direct relationship. This has important theoretical implications where previous research has inadequately assessed behaviours as both a cause of future behaviour, as well as an outcome or effect (Phipps, et al., 2013). Overall, while assessment of behavioural influences greatly aided the ability to explain member retention behaviour, the primary assessment of indirect relationships is considered incomprehensive. Future research should assess direct relationships in order to derive the direct relevance of SCT influences for explaining member retention behaviour in a fitness facility context.

Consideration of service quality through the lens of SCT also poses theoretical implications. Specifically, the distinguished role of process quality and outcome quality support a multi-dimensional approach to service quality conceptualisation. In this way, findings demonstrate the utility of investigating both customers' perceptions of the service attributes and the outcomes of service engagement, akin to existing conceptualisation (Howat & Assaker, 2016). Overall, this research provides support for a multi-dimensional conceptualisation of service quality, with process quality and outcome quality distinguished as higher-order formative constructs. Implications pose that this conceptualisation can be adopted within those wider sport and leisure contexts, which seek to delineate perceptions of service quality.

Broadly, evaluation of individual, environmental, and behavioural influences enhances understanding of reciprocity in a fitness facility context. Specifically, the significant relationship between individual and behavioural influences supports that these cannot be evaluated separately and do not influence behaviour in isolation. Conversely, while an indirect pathway supports the need to consider environmental influences when explaining member retention behaviour, these influences are viewed as less critical and less active through a lens of reciprocal determinism. Overall, findings purport that behaviour is shaped and controlled by continuous reciprocal interactions between individual, environmental, and behavioural influences. Theoretically, consideration of the distinct influences of SCT and their interrelationships is necessary to effectively understand member retention behaviour.

The capture and integration of a greater array of SCT influences demonstrate that various influences stimulate exercise maintenance and facilitation. In particular, the introduction of behavioural influences greatly aided the ability to explain member retention outcomes. This research has laid the foundation for future research related to the SCT

perspective of member attitudes, perceptions, and behaviour in a fitness facility context.

Overall, discerning the value and applicability of individual, environmental, and behavioural influences extends the options for conceptualisation and measurement within leisure contexts, and substantiates the utility of SCT for use in a breadth of research areas.

8.4 Managerial Implications

An enhanced understanding of member retention and its determinants offers clear contributions to fitness facility management whose financial viability largely relies on the revenue provided by membership fees (Lam, et al., 2005; Reichheld & Sasser, 1990; Sawyer & Smith, 1999; Tsitskari & Tsakiraki, 2013). The findings of this research provide a valid and reliable means for measuring retention, loyalty, and service quality, and support practical steps for understanding and managing member behaviour in a fitness facility context. There are several managerial implications for practitioners operating within a fitness facility context.

Firstly, any research that identifies determinants of retention should have direct implications for the management of fitness facilities. Findings suggest that fitness facility management could benefit from considering attendance behaviour and behavioural loyalty as direct drivers of member retention. Managers should therefore closely monitor the key determinants of member retention and use this information to identify members with a high propensity for non-renewal. Once identified, early intervention or preventative measures can be implemented to address these determinants and therefore improve the likelihood that members will be retained. Overall, enhanced understanding of determinants enables fitness facility management to adjust decision-making and optimise management effort for improved member retention. The merit of attendance behaviour and behavioural loyalty as direct determinants of member retention, guides practitioners to collect meaningful member data

that improves the interpretation and prediction of member retention in a fitness facility context.

Secondly, fitness facility managers should balance the perceived utility of self-reported and observed attendance behaviour. While both sources of exercise behaviour are useful to explain member retention, observed attendance behaviour exhibits increased explanatory power. In a fitness facility context, this promotes an important shift in the collection of data. Specifically, fitness facilities should endeavour to prioritise the capture and evaluation of observed behavioural data, over self-report attitudinal data. This shift does not remove the importance of attitudinal data but suggests that the preferential collection of behavioural data will provide a more robust framework from which to derive intervention. Overall, it is recommended that the decision to collect, store, and evaluate behavioural data be embedded into management strategy, to improve derivation of member retention behaviour.

Thirdly, this research employed and supported a multi-dimensional loyalty construct (*attitudinal loyalty and behavioural loyalty*). By employing a multi-dimensional loyalty construct, a clear distinction in the application and outcomes of different loyalty measures is revealed. From a practical standpoint, behavioural loyalty is shown as a direct determinant of member retention. This relationship emphasises the importance of behavioural loyalty and behavioural loyalty determinants for existing member groups. Conversely, findings propose that while attitudinal loyalty is a distinct construct with merit, it does not contribute to the explanation of member retention. For management, this offers valuable insight. In particular, attitudinal loyalty is suggested as a tool to promote word of mouth and recommendation intention, as opposed to retention. Management should be aware of and focus on distinct loyalty constructs, depending on the nature of their strategic objectives. For example, to

encourage member retention behaviour within new or existing members, behavioural loyalty should be a key focus. Alternatively, for word-of-mouth recommendation, attitudinal loyalty should be the primary focus of strategic development. In sum, understanding loyalty as multi-dimensional enables practitioners to target the specific conditions underlying loyalty more effectively, and provides insight into the differing role of loyalty constructs for explaining and predicting member retention behaviour.

Fourthly, support of the role of self-efficacy poses significant implications for fitness facility management. Through integration of an SCT perspective, self-efficacy was a direct determinant of behavioural influences and an indirect determinant of member retention. In a broader sense, practitioners need to be aware of the concept of self-efficacy and the means for encouraging it. For example, practitioners should develop strategies that support success acknowledgment, and the provision of positive feedback. In this way, verifying self-efficacy as an antecedent of behaviour is important for practitioners engaging with existing, new, and potential members.

Finally, the proposed framework considered the unique features of fitness services and was developed as industry specific. Therefore, practitioners can use supported service quality constructs – process quality and outcome quality – when formulating management strategy. For example, where management intends to focus on improving service touchpoints, process quality dimensions – facility presentation, core services, staff, and parking – should be addressed. Alternatively, where management intends improve expected outcomes resulting from behaviour, outcome quality dimensions – competition success, social connection, health and fitness, and relaxation and stress release – should be central to strategic intervention. Overall, consideration of higher-order service quality constructs and corresponding lower-order dimensions can reframe management strategies and tactics to redesign the service

delivery system. These efforts are supported as positively contributing to increased customer satisfaction and may provide an opportunity for fitness facility management to stay competitive within a saturated market environment.

Several practical implications are supported for intervention design within the sport and leisure industries. Contributions of this research provide enhanced conceptualisation of service quality and loyalty in a fitness facility context and a better understanding of member retention and its determinants. Particularly, fitness facility managers are encouraged to consider attendance behaviour and behavioural loyalty as direct determinants of member retention. Findings position fitness facility management to better understand member engagement and design interventions, which address sustained physical activity participation and membership retention.

8.5 Research Limitations and Future Research

Typical of all research, limitations exist that impact both theoretical and managerial implications. Acknowledging these limitations is important, including where future research avenues may be proposed. Limitations specific to this research include data collection through a questionnaire method, sample size and generalisability, investigation of a single fitness facility, and measurement of variables outside of the study scope. Specific characteristics of the fitness facility investigated need to be taken into consideration when applying the recommended methods and findings to other sports contexts, and sport-related industries, as results may differ due to contextual factors.

As stated above, the use of a questionnaire instrument and corresponding data posed specific limitations. These limitations arise due to the self-administered nature of questionnaires, where clarity, or further explanation, was unable to be provided to

participants. While the online questionnaires were developed to ensure that all members were provided equal opportunity to participate, this could not be guaranteed. The self-administered format could not control for those participants with a lower level of literacy, or for lacking completion due to boredom and fatigue (Bryman, 2008). A further limitation of the questionnaire instrument was the intention to measure multiple constructs simultaneously. The questionnaire method does not permit investigation of causal relationships, meaning all constructs are measured equally. Future research should seek to preferentially collect and evaluate behavioural data to alleviate these limitations. Expanding beyond the methods of behavioural data collection in the current research, future research could consider the use of technology tracking in longitudinal designs to advance behavioural data capture and use.

Regarding the quality of data collected from the questionnaire instrument, issues are presented as a result of high levels of non-response. This is problematic where low response rates are often associated with non-response bias. Such inferences propose respondents as systematically different to non-respondents. Non-response levels saw 511 respondents in Research Stage One with an 85.6% non-response, and 661 respondents in Research Stage Two with an 84% non-response. Additionally, both online questionnaires demonstrated an over-representation of females, compared to males. While findings remained largely representative, and control variables were used to delineate impact of bias, enhancing a balanced number of participants from each gender should be considered in future research. In sum, low response rate and gender imbalance should be acknowledged regarding the generalisability of the current research. As a final consideration of data quality, collection of at least three indicators for each construct should be sought by future research. While PLS-SEM was able to overcome these shortcomings in the current research (e.g., value, parking, social connection, attitudinal loyalty, and behavioural loyalty) the use of CB-SEM, or

alternative methods, in future research would require collection of a greater number of indicators.

The sampling design pursued within the current research was subject to limitations. While the questionnaire instrument was disseminated to all members operating under a ‘continuous’ service relationship at a single fitness facility, the purposive and convenience sampling method did not account for members within alternate fitness service contexts. Therefore, distinct customer segments were not explored across fitness service offerings and pricing structures. The resulting representativeness is limited and restricts the extent to which findings can be generalised. Future research should consider a larger sample size that accounts for a broader array of member characteristics and intentions across fitness service operators and a larger scope of fitness service offerings. In addition, the significance of brand identification implicit with different services may improve generalisability of retention drivers across differing fitness service providers.

Further limitations exist through investigation of a single fitness facility operating under the Australian sporting system. These limitations arise from the potential for distinct cultural differences to influence members perceptions, attitudes, and behaviours. At large, culture, as exemplified through an individual’s social environment, has the potential to determine patterns of behaviour. Through a fitness facility lens, it is expected that member perceptions, attitudes, and behaviours will differ depending on their cultural background. This is particularly relevant where the current research sought to investigate member retention behaviour through SCT influences. Therefore, the implications of contextual factors limit the generalisability of results to international populations and should be treated with caution outside of the Australian system. Future research could contribute to understanding of

member retention by replicating the proposed framework in differing subscription sporting contexts or in differing cultural contexts.

While a solid academic foundation is provided by the current research, future theoretical work should continue to assess member retention and establish its key determinants. Consideration should be made to extend the collection and assessment of retention data, beyond six-months following survey completion. To do this, future research should seek to replicate and explore the application of supported frameworks in alternate contexts and should consider alternative modelling methods and approaches, such as machine learning, to refine the collection and assessment of variables. Further, future research could address insufficient consideration to member retention determinants through a combined approach that measures the role of external factors, such as motivation, broader membership, and switching behaviours, that were omitted from the scope of this research. Investigation of such factors could enable an improved capture of the key determinants of member retention in a fitness facility context. Such consideration could also be made to advance the conceptualisation and measurement of outcome quality, where this study replicated dimensions previously assessed by Howat and Assaker (2016). Expanding the representation of benefits received from service engagement may enhance the role of outcome quality as an explanatory variable. Finally, despite the study being longitudinal, the cross-sectional design of the current research proposes accurate findings at a point in time. It is a snapshot of member attitudes over the measurement window, and may have limited applications beyond this time due to the dynamic nature of the construct relationships. Such dynamic interplay between constructs could be taken into consideration within future research efforts to provide an enduring assessment of member retention determinants.

8.6 Concluding Comments

This research used both attitudinal and observed behavioural data to improve understanding of member retention and its determinants in a fitness facility context. Specifically, while much past work has examined attitudinal constructs to measure experience and intention, very few studies in leisure contexts utilise behaviour to effectively understand member retention as a loyalty outcome. This research is among the first to provide a concurrent assessment supporting a deeper consideration of experiences and environments, as well as behaviours, in a longitudinal examination. A theoretical and conceptual framework was developed based on past literature and the quantitative research was undertaken at a single fitness facility in Australia.

Implications of this research propose the utility of a multi-dimensional conceptualisation of loyalty and an understanding of the role of SCT influences for explaining member retention in the context of fitness facilities. Emerging from this research, empirical validation presents self-reported attendance behaviour, observed attendance behaviour, and behavioural loyalty as significant, and as direct determinants of member retention. Further, this research presents a fundamental shift towards observed attendance behaviour as the preferred approach when intending to explain or predict member retention. This shift does not deny the importance of attitudinal data, but suggests that behavioural data is crucial – and indeed more important – to provide a robust framework from which to derive intervention. Evaluation and delineation of member retention, as well as assertion of the preferential collection and use of observed attendance behaviour, provide greater insight for researchers and practitioners in the field of sport and leisure management.

While this research provides a solid foundation, continued examination of member retention determinants is suggested through replication or validation of supported frameworks

in broader contexts and evaluation of factors omitted from the scope of this research. Overall, through the conceptualisation proposed, fitness facilities are positioned to evaluate their service performance and design interventions that address sustained physical activity participation and membership retention. Such development is essential to the optimal function and performance of fitness facilities.

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APPENDICES

Appendix A: Ethics Clearance

29/10/2020

Ref: 20200751-5393: The Utility of Attitudes and Observed Behaviour in
Fitness Facility Retention

Approved Duration: 27/03/2018 to 10/02/2020

Chief Investigator: Heath McDonald

I refer to your request to modify the approved protocol for the above project. The request was put to a SUHREC/SHESC delegate for consideration.

I am pleased to advise that, as modified to date, the project may continue in line with standard ethics clearance conditions previously communicated and reprinted below. Please note that information on self-auditing, progress/final reporting and modifications/additions to approved protocols can now be found on the Research Ethics Internet pages.

Please contact the Research Ethics Office if you have any queries about on-going ethics clearance, citing the project number. A copy of this correspondence should be retained as part of project record-keeping and forwarded to relevant members of the project team.

This modification was approved during COVID-19 restrictions. The conduct of the research during this period should reflect any changes in relation to university and government COVID-19 mandates in the relevant jurisdictions. To ensure you have accommodated these mandates please refer to the Swinburne Ethics COVID-19 website [here](#).

As before, best wishes for the project.

Yours sincerely,

Ms Leah Barham

Research Ethics Office

Swinburne University of Technology

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Appendix B: Final Survey Instrument Research Stage One

INTRODUCTION

Thank you for agreeing to take part in this survey.

The survey will take approximately **10 minutes** to complete. All information provided will be used for research purposes only and reported at a group level.

SECTION 1: PARTICIPANT BACKGROUND

Q1. Postcode

What is your postcode? _____

Q2. Length of Time (in years) at that Postcode

>1 year 1 – 2 years 2 – 3 years 3 – 4 years 4 – 5 years <5 years

Q3. What is your gender?

Male Female Other Prefer Not To Say

Q4. What is your age (years)?

Which age group do you fall into...?

18 – 24 25 – 34 35 – 44 45 – 54 55 – 64 65 and above

Q5. What is your Membership Type?

Which membership do you currently hold?

Complete Membership (12 month) Aquatic Membership (Flexi or month to month)
 Complete Membership (Flexi or month to month) Swim School Membership
 Aquatic Membership (12 month) Teen Membership

Q6. Use of Fitness Facility

Which area of your Fitness Facility have you used in the last 3 months?

Gym Cardio Equipment Basketball Courts
 Gym Weight Equipment Child Care
 Group Fitness Class Canteen
 Swimming Pool Other (please specify)

Q7. Length of Time as Member

How long have you been a member of your Fitness Facility?

Less than three months Over a year
 Between three months and six months Over two years
 Six months to one year

SECTION 2: OUTCOME QUALITY

Q8. Please show the extent to which you agree or disagree with the following: Attendance at my fitness facility helps me achieve...		<i>Strongly Disagree</i>					<i>Strongly Agree</i>	
Q8.1	Improved performance in competitive sport.	1	2	3	4	5	6	7
Q8.2	Pushing myself in competition.	1	2	3	4	5	6	7
Q8.3	Success in competition.	1	2	3	4	5	6	7
Q8.4	Spending time with family and/or friends.	1	2	3	4	5	6	7
Q8.5	Enjoying time with family and/or friends.	1	2	3	4	5	6	7
Q8.6	Improved physical fitness.	1	2	3	4	5	6	7
Q8.7	Improved health.	1	2	3	4	5	6	7
Q8.8	Improved mood.	1	2	3	4	5	6	7
Q8.9	Improved psychological wellbeing.	1	2	3	4	5	6	7
Q8.10	Escaping the pressures of daily life.	1	2	3	4	5	6	7
Q8.11	Reducing stress levels.	1	2	3	4	5	6	7
Q8.12	Relaxation.	1	2	3	4	5	6	7

SECTION 3: PROCESS QUALITY

Q9. This section deals with your opinions of your Fitness Centre's services. Please show the extent to which you agree or disagree with the following.		<i>Strongly disagree</i>					<i>Strongly agree</i>	
Q9.1	The fitness facility is always clean.	1	2	3	4	5	6	7
Q9.2	The fitness facility is well maintained.	1	2	3	4	5	6	7
Q9.3	Equipment is of high quality and well maintained.	1	2	3	4	5	6	7
Q9.4	Up-to-date information is available (e.g. activities, results).	1	2	3	4	5	6	7
Q9.5	The fitness facility is well organised and well run.	1	2	3	4	5	6	7
Q9.6	A suitable range of activities is available.	1	2	3	4	5	6	7
Q9.7	The fitness facility's programs start and finish on time.	1	2	3	4	5	6	7
Q9.8	Activities are relevant to the needs of the customers.	1	2	3	4	5	6	7
Q9.9	The fitness facility's parking is very safe and secure.	1	2	3	4	5	6	7
Q9.10	The fitness facility's parking is suitable.	1	2	3	4	5	6	7
Q9.11	Staff are friendly.	1	2	3	4	5	6	7
Q9.12	Staff are responsive.	1	2	3	4	5	6	7
Q9.13	Staff are presentable and easily identified.	1	2	3	4	5	6	7
Q9.14	Staff are experienced and knowledgeable.	1	2	3	4	5	6	7

SECTION 4: SATISFACTION AND VALUE

Q10. Value To what extent do you agree with the following:	Extremely Dissatisfied										Extremely Satisfied
My fitness facility's facilities provide value for money	0	1	2	3	4	5	6	7	8	9	10
My fitness facility's programs provide value for money	0	1	2	3	4	5	6	7	8	9	10
Q11. Satisfaction	Extremely Dissatisfied										Extremely Satisfied
Overall, how satisfied are you with your fitness facility experience as a user of the centre?	0	1	2	3	4	5	6	7	8	9	10
Overall, how satisfied are you with your experience as a member at your fitness facility ?	0	1	2	3	4	5	6	7	8	9	10

SECTION 5: BEHAVIOURAL INTENTIONS

Q12. Behavioural Intentions	<i>Not At All</i>										<i>Definitely</i>
How likely are you to make positive comments about the fitness facility and its services to other people?	0	1	2	3	4	5	6	7	8	9	10
How likely would you be to encourage others to attend the fitness facility ?	0	1	2	3	4	5	6	7	8	9	10
On a scale of 0 to 10, how likely is it that you would recommend your fitness facility to a friend or colleague?	0	1	2	3	4	5	6	7	8	9	10

SECTION 6: FINAL CLASSIFICATION

Q13. Lifestage

Which of these best describes your household?

- Single/Couple with no children
- Group of adults living in shared accommodation
- Family with children living at home, where youngest child is under 5yrs
- Family with children living at home, where youngest child is 5-15yrs
- Family with children living at home, where youngest child is over 15yrs
- Single/Couple whose children have left home
- Other family

Q14. Income

What is your combined annual household income before tax?

Note: this information is for analysis purposes only and will remain anonymous.

- Under \$25,000
- \$25,001 to \$50,000
- \$50,001 to \$75,000
- \$75,001 to \$100,000
- \$100,001 to \$150,000
- \$150,001 to \$200,000
- \$200,001 to \$300,000
- Over \$300,000
- Prefer not to say

Q15. Education

What is the highest level of education you have completed?

- Up to Year 9 or 10
- Up to Year 11 or 12
- TAFE / Apprenticeship / Diploma
- Undergraduate Degree
- Postgraduate Degree
- Masters / PhD
- Something else
- Prefer not to say

Q16. Employment

What is your current employment status?

- Working full time
- Working part time or casual
- Unemployed or looking for work
- Student
- Retired
- Home Duties
- Other
- Prefer not to say

Q17. Competency	<i>Disagree</i>			<i>Agree</i>		
And to what extent do you feel you have sufficient knowledge to complete the questionnaire in this survey?	1	2	3	4	5	6
	7					

Thank you for completing this questionnaire.

If you have questions, please contact Research Ethics Officer, Swinburne Research (H68), Swinburne University of Technology, P O Box 218, HAWTHORN VIC 3122. Tel (03) 9214 5218 or +61 3 9214 5218 or resethics@swin.edu.au.

Appendix C: Final Survey Instrument Research Stage Two

HEALTH AND FITNESS HABITS

Thank you for agreeing to take part in this survey.

The survey will take approximately **15 minutes** to complete. All information provided will be used for research purposes only and reported at a group level.

SECTION 1: PARTICIPANT BACKGROUND

Q1. Postcode

What is your postcode? _____

Q2. What is your gender?

- Male Female Other Prefer Not To Say

Q3. What is your age (years)?

Which age group do you fall into...?

- 18 – 24 25 – 34 35 – 44 45 – 54 55 – 64 65 and above

Q4. What is your Membership Type?

Which membership do you currently hold?

- Complete Membership Swim School Membership
 Aquatic Membership Teen Membership

Q5. Use of Fitness Facility

Which area of your Fitness Facility have you used in the last 3 months?

- Gym Cardio Equipment Basketball Courts
 Gym Weight Equipment Child Care
 Group Fitness Class Canteen
 Swimming Pool Other (please specify)

Q6. Length of Time as Member

How long have you been a member of your Fitness Facility?

- Less than three months Between two years and five years
 Between three months and six months Between five years and ten years
 Six months to one year More than ten years
 Between one year and two years

Q7. Usage as Member

- >1 Visit per Week 5 Visits per Week
 1 Visits per Week 6 Visits per Week
 2 Visits per Week 7 Visits per Week
 3 Visits per Week More Than Seven Visits per Week
 4 Visits per Week

EXERCISE TYPE AND INTENSITY

[Q8.] Strenuous physical exercise is exercise that causes heavy perspiration and a great increase in heartbeat rate, for example running, fast walking, and aerobic activity. In the last three

months, how often did you engage in strenuous physical exercise that continued for at least 20 consecutive minutes?

- Never Often

[Q9.] Physical exercise to strengthen muscles is exercise intended to strengthen and build muscles, for example gymnastics, bodybuilding, and weightlifting. In the last three months, how often did you engage in exercise to strengthen muscles?

- Never Often

[Q10.] Moderate physical exercise is exercise that causes light perspiration and a small increase in the heartbeat rate, for example moderate walking, bicycle riding, and swimming. In the past three months, how often did you engage in moderate physical exercise that continued for at least 20 consecutive minutes?

- Never Often

SECTION 2: LEISURE ACTIVITY CONSUMPTION

Q11. Other Health and Fitness Consumption

Which of the following other sport and leisure activities do you participate in?

- I play a competitive form of sport for a club or team
- I play a social form of sport for a club or team
- I coach, umpire or are involved in the administration of a competition, club or team
- I compete in events (e.g. fun runs, triathlons) or other organised sport events
- Informal sport and leisure (e.g. walking; cycling)
- None of these

Q12. Approximately how many hours a week would you spend on sport or leisure activities per week (not including entertainment or sport events you may attend as a spectator)?

- | | |
|-----------------------|--------------------------------|
| 1. 0 hours per week | 5. 8-10 hours per week |
| 2. 1-2 hours per week | 6. 11-12 hours per week |
| 3. 3-4 hours per week | 7. 13-15 hours per week |
| 4. 5-7 hours per week | 8. More than 15 hours per week |

Q13. Of the time you spend on sport or leisure activities, approximately what percentage of these are related to XXX? (please choose the closest option)

- | | |
|--------|----------|
| 1. 0% | 7. 60% |
| 2. 10% | 8. 70% |
| 3. 20% | 9. 80% |
| 4. 30% | 10. 90% |
| 5. 40% | 11. 100% |
| 6. 50% | |

Q14. Considering all costs, how much per week would you estimate you spend on sport and active leisure activities per week? (not including entertainment or events you may attend)

- | | |
|----------------------|------------------------------|
| 1. \$0 per week | 7. \$101-120 per week |
| 2. \$1-20 per week | 8. \$121-140 per week |
| 3. \$21-40 per week | 9. \$141-160 per week |
| 4. \$41-60 per week | 10. \$161-180 per week |
| 5. \$61-80 per week | 11. \$181-200 per week |
| 6. \$81-100 per week | 12. More than \$200 per week |

Q15. Of the costs per week you spend on sport or leisure activities, approximately what percentage of these are related to your fitness facility? (please choose the closest option)

1. 0%
2. 10%
3. 20%
4. 30%
5. 40%
6. 50%

7. 60%
8. 70%
9. 80%
10. 90%
11. 100%

Q16. Involvement Considering your experience at your Fitness Facility, how do you rate the following?		<i>Strongly Disagree</i>					<i>Strongly Agree</i>	
Q16.1	A lot of my time is organised around attending my fitness facility.	1	2	3	4	5	6	7
Q16.2	A lot of my life is organised around my fitness facility.	1	2	3	4	5	6	7
Q16.3	Attending my fitness facility has a central role in my life.	1	2	3	4	5	6	7

Q17. Centrality On the following scale please indicate which category best represents you:	<i>Casual Attendee</i>	<i>Intermittent Attendee</i>	<i>Workout Buddy</i>	<i>Fitness Hobbyist</i>	<i>Dedicated Member</i>	<i>Gym Junkie</i>	<i>Hard-core Fitness Fanatic</i>
When I think about gym and fitness activity, generally, I consider myself a							
When I think about my fitness facility, I consider myself a							

SECTION 3: SELF-EFFICACY

Q18. Please show the extent to which you agree or disagree with the following:		<i>Strongly Disagree</i>					<i>Strongly Agree</i>	
Q18.1	I feel confident that I could do 20 minutes of aerobic exercise three times a week.	1	2	3	4	5	6	7
Q18.2	I feel confident that I know how to do aerobic exercise correctly.	1	2	3	4	5	6	7
Q18.3	I feel confident that I could do many different kinds of aerobic exercise.	1	2	3	4	5	6	7

SECTION 4: OUTCOME QUALITY

Q19. Please show the extent to which you agree or disagree with the following: Attendance at my fitness facility helps me achieve...		<i>Strongly Disagree</i>					<i>Strongly Agree</i>	
Q19.1	Improved performance in competitive sport.	1	2	3	4	5	6	7
Q19.2	Pushing myself in competition.	1	2	3	4	5	6	7
Q19.3	Success in competition.	1	2	3	4	5	6	7
Q19.4	Spending time with family and/or friends.	1	2	3	4	5	6	7
Q19.5	Enjoying time with family and/or friends.	1	2	3	4	5	6	7
Q19.6	Improved physical fitness.	1	2	3	4	5	6	7

Q19.7	Improved health.	1	2	3	4	5	6	7
Q19.8	Improved mood.	1	2	3	4	5	6	7
Q19.9	Improved psychological wellbeing.	1	2	3	4	5	6	7
Q19.10	Escaping the pressures of daily life.	1	2	3	4	5	6	7
Q19.11	Reducing stress levels.	1	2	3	4	5	6	7
Q19.12	Relaxation.	1	2	3	4	5	6	7

SECTION 5: PROCESS QUALITY

Q20. This section deals with your opinions of your Fitness Centre's services. Please show the extent to which you agree or disagree with the following.		<i>Strongly disagree</i>					<i>Strongly agree</i>	
Q20.1	The fitness facility is always clean.	1	2	3	4	5	6	7
Q20.2	The fitness facility is well maintained.	1	2	3	4	5	6	7
Q20.3	My fitness facility's physical facilities are visually appealing.	1	2	3	4	5	6	7
Q20.4	My fitness facility is safe and comfortable.	1	2	3	4	5	6	7
Q20.5	Equipment is of high quality and well maintained.	1	2	3	4	5	6	7
Q20.6	Up-to-date information is available (e.g. activities, results).	1	2	3	4	5	6	7
Q20.7	The fitness facility is well organised and well run.	1	2	3	4	5	6	7
Q20.8	My fitness facility is dependable.	1	2	3	4	5	6	7
Q20.9	My fitness facility keeps its records accurately.	1	2	3	4	5	6	7
Q20.10	A suitable range of activities is available.	1	2	3	4	5	6	7
Q20.11	The fitness facility's programs start and finish on time.	1	2	3	4	5	6	7
Q20.12	Activities are relevant to the needs of the customers.	1	2	3	4	5	6	7
Q20.13	My fitness facility has operating hours convenient to all its customers.	1	2	3	4	5	6	7
Q20.14	The level of programs/services in this fitness facility are very high.	1	2	3	4	5	6	7
Q20.15	This centre offers outstanding programs/services.	1	2	3	4	5	6	7
Q20.16	Staff are friendly.	1	2	3	4	5	6	7
Q20.17	Staff are responsive.	1	2	3	4	5	6	7
Q20.18	Staff are presentable and easily identified.	1	2	3	4	5	6	7
Q20.19	Staff are experienced and knowledgeable.	1	2	3	4	5	6	7
Q20.20	The fitness facility's parking is very safe and secure.	1	2	3	4	5	6	7
Q20.21	The fitness facility's parking is suitable.	1	2	3	4	5	6	7
Q20.22	My fitness facility gives you individual attention.	1	2	3	4	5	6	7
Q20.23	My fitness facility has your best interests at heart.	1	2	3	4	5	6	7
Q20.24	Employees of my fitness facility understand your specific needs.	1	2	3	4	5	6	7
Q20.25	Employees give prompt services to members	1	2	3	4	5	6	7
Q20.26	Employees handle members' problems promptly and satisfactorily	1	2	3	4	5	6	7

SECTION 6: SATISFACTION AND VALUE

Q21. Value To what extent do you agree with the following:		<i>Strongly Disagree</i>				<i>Strongly Agree</i>			
Q21.1	My fitness facility provides value for money.	1	2	3	4	5	6	7	
Q21.2	My fitness facility's programs provide value for money.	1	2	3	4	5	6	7	
Q22. Satisfaction To what extent do you agree with the following		<i>Strongly Disagree</i>				<i>Strongly Agree</i>			
Q22.1	I am fully satisfied with my fitness facility	1	2	3	4	5	6	7	
Q22.2	My fitness facility always fulfils my expectations	1	2	3	4	5	6	7	
Q22.3	My experiences with my fitness facility are excellent	1	2	3	4	5	6	7	
Q22.4	My fitness facility has never disappointed me so far	1	2	3	4	5	6	7	

SECTION 7: BEHAVIOURAL INTENTIONS

Q23. Behavioural Intentions	<i>Not at All</i>										<i>Definitely</i>	
How likely are you to make positive comments about the fitness facility and its services to other people?	0	1	2	3	4	5	6	7	8	9	10	
How likely is it that you will talk to your friends or family about exercise in the next three months?	0	1	2	3	4	5	6	7	8	9	10	
How likely are you to visit the fitness facility over the next week?	0	1	2	3	4	5	6	7	8	9	10	
How likely are you to visit the fitness facility over the next month?	0	1	2	3	4	5	6	7	8	9	10	

Q24. Behavioural Intentions How likely are you to...?	<i>'No chance (1/100)'</i>										<i>'Certain, practically certain (99/100)'</i>	
...continue to be a member for the next 3 months?	0	1	2	3	4	5	6	7	8	9	10	
...continue to be a member for the next 12 months?	0	1	2	3	4	5	6	7	8	9	10	
On a scale of 0 to 10, how likely is it that you would recommend your Fitness Centre to a friend or colleague?	0	1	2	3	4	5	6	7	8	9	10	

Thank you for completing this questionnaire.

If you have questions, please contact Research Ethics Officer, Swinburne Research (H68), Swinburne University of Technology, P O Box 218, HAWTHORN VIC 3122. Tel (03) 9214 5218 or +61 3 9214 5218 or resethics@swin.edu.au.