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**Team loyalty and its antecedents in the National Basketball
Association**

A thesis submitted in partial fulfilment of the requirements for
the Degree of Doctor of Philosophy

at
Lincoln University
by
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Lincoln University
2022

Abstract

Sports organisations in many countries are now experiencing intense competition because of the recent rise of alternative leisure and entertainment activities. Developing effective marketing strategies to gain competitive advantage and maintain long-term sustainability has become a top priority for many sports organisations. Previous research findings suggest that maintaining customer loyalty is a time- and cost-effective strategy for sports organisations to gain a long-term competitive advantage in a highly competitive business environment. Therefore, the present research investigates team loyalty and its antecedents in the National Basketball Association (NBA). The interrelationships among several higher-order constructs: service quality, spectator satisfaction, team image, team engagement, negative team behaviour, player loyalty and team loyalty, are analysed. The mediating effects between selected constructs are also examined. The present research also analyses the age and gender differences among surveyed NBA fans.

The research data (N=243) were collected through a self-administered online survey between 28 April 2020 and 10 June 2020. Three focus group discussions and a pre-test were conducted before the data collection process. Confirmatory factor analysis, structural equation modelling, multi-group comparison analysis, and one-way analysis of variance were used to analyse the research data.

The present research findings demonstrate that team engagement, spectator satisfaction and team image exert significant and direct positive effects on team loyalty, while service quality positively affects team loyalty indirectly through other constructs. The empirical test results of this research also show that NBA fans' perceptions of related higher-order marketing constructs vary across age and gender groups.

This research provides a single comprehensive framework that examines the interrelationships among seven important higher-order marketing constructs in relation to the NBA. The comprehensive modelling approach used in the present research will provide a platform for future studies that examine the complex interrelationships among these constructs in another sporting context. The findings from the present research will also assist NBA practitioners in shaping and implementing their marketing strategies to develop and retain loyal fans.

Keywords: The National Basketball Association, Team Loyalty, Service Quality, Team Engagement, Age, Gender

Acknowledgements

“What we observe is not nature in itself but nature exposed to our method of questioning.”

--- Werner Heisenberg

Inspired by numerous great minds, I have started my own journey of pursuing truth. On the journey, I have received help and support from many people. Firstly, my gratitude goes to my family – mother: Xiangai Qiu; father: Zhongsheng Yang; brother: Yong Yang; niece: Ziyu Yang. Thank you, mum and dad, for your unconditional love and support. How lucky I am to have you as my parents! Thank you, my brother, for taking caring care of the family, especially when mum was sick. I feel so selfish for having been away from home for such a long time, leaving all the responsibilities over to you. I will not be able to complete my study without you. I would also like to express my special thanks to my partner, Yiwei Chen, and my dog, Winter, who have been providing me with both physical and emotional support all the time.

I would like to express my sincere gratitude to my primary supervisor, Michael D. Clemes. He is more than a supervisor to me. Despite offering professional help on the research project, he also encourages my personal development and provides psychological support. His mentorship is one of the most valuable assets that I have ever had. Thank you, Mike! I will miss the days when we talked about our lives and the world.

I am also grateful for having Kathryn Bicknell and Christopher Gan as my associated supervisors. Thanks, Katie, for your constructive and valuable suggestions on the entire project, from designing the survey to interpreting the research findings. Your knowledge and sharp eyes are essential to the completion of the project. Thanks, Chris, for providing me with significant help on my enrolment and introducing me to such a wonderful team. Your continuing support is really appreciated.

This project cannot be completed without those who have taken part in the survey. Thank you for your trust and input. This was not easy when our lives have been disrupted by the COVID-19 pandemic.

I would also like to thank Lincoln University for offering me the Doctoral Scholarship which provided me with huge financial support and helped me better focus on my research. The help from Anne Welford and our wonderful administration team is also highly appreciated. My appreciation also goes to my editor, Pam Oliver, for her quick and accurate feedback.

Lastly, thank you to all my friends whose names have not been mentioned here. Thank you, Johann Sebastian Bach, Johann Pachelbel, Yoyo Ma, Sin Won Ho, Zidong Xu, Man-tao Leung and Vistopia for relaxing my mind when I was tired.

I would like to end this acknowledgement with a Māori whakataukī: “Ehara taku toa i te toa takitahi, engari he toa takitini” (“success is not the work of an individual, but the work of many”).

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Chapter 1

Introduction

1.1 Problem Setting

Sports organisations in many countries are now experiencing intense competition because of the recent rise of alternative leisure and entertainment activities (Bauer et al., 2008; Dick & Schwarz, 2020; Mullin et al., 2014; Rohman, 2019; Theodorakis et al., 2013; Wu & Cheng, 2018; Yun et al., 2020). Developing effective marketing strategies to gain competitive advantage and maintain long-term sustainability has become a top priority for many sports organisations (Chung et al., 2019; Dick & Schwarz, 2020; Kim et al., 2020; Lee et al., 2017; Rohman, 2019; Theodorakis et al., 2013; Tsiotsou, 2013).

Findings from several studies suggest that maintaining customer loyalty is a time- and cost-effective strategy for sports organisations to gain a long-term competitive advantage in a highly competitive business environment (Rohman, 2019; Theodorakis et al., 2013; Wu et al., 2012; Yildiz & Duyan, 2019; Yun et al., 2020). Loyal sports customers are more likely to attend live games, engage with the sports organisation, are less likely to switch to a better-performing team during a losing season, and tend to be less price-sensitive, which can ultimately help the organisation improve financial performance and gain competitive advantage (Bee & Havitz, 2010; Bee & Kahle, 2006; Lee et al., 2017; Rohman, 2019; Wu et al., 2012). Investigating customer loyalty and its antecedents is especially critical in the professional sports industry because the game outcome is often unpredictable, and customer loyalty helps ensure a stable fan following even when the team's performance falters (Biscaia et al., 2013; Kim et al., 2020; Lee et al., 2020; Theodorakis et al., 2013).

A diversity of antecedents of customer loyalty has been identified in various service industries, such as hospitality (Channoi et al., 2018; Hallak et al., 2018; Hussein, 2018), transport (Chou et al., 2011; Hapsari et al., 2017), education (Clemes et al., 2013; Khawaja et al., 2021; Sultan & Wong, 2019), tourism (Jeong & Kim, 2020; Li et al., 2020; So et al., 2016), and sports (Byon et al., 2013; Park et al., 2019; Rohman, 2019; Yoshida et al., 2014; Yun et al., 2020). However, several scholars note that factors that foster customer loyalty may differ across service industries (Channoi et al., 2018; Hapsari et al., 2017; Watanabe et al., 2013). Funk et al. (2016) note that the characteristics of sports consumers may be very different from those in other industries. Therefore, the findings from other industries may not be validly applied to the sports industry (Funk et al., 2016). Furthermore, the characteristics of consumers may also vary within an industry (Arnerić et al., 2016; Cambra-Fierro & Melero-Polo, 2017; Kotler & Armstrong, 2018; Tian et al., 2015). Consumers may be

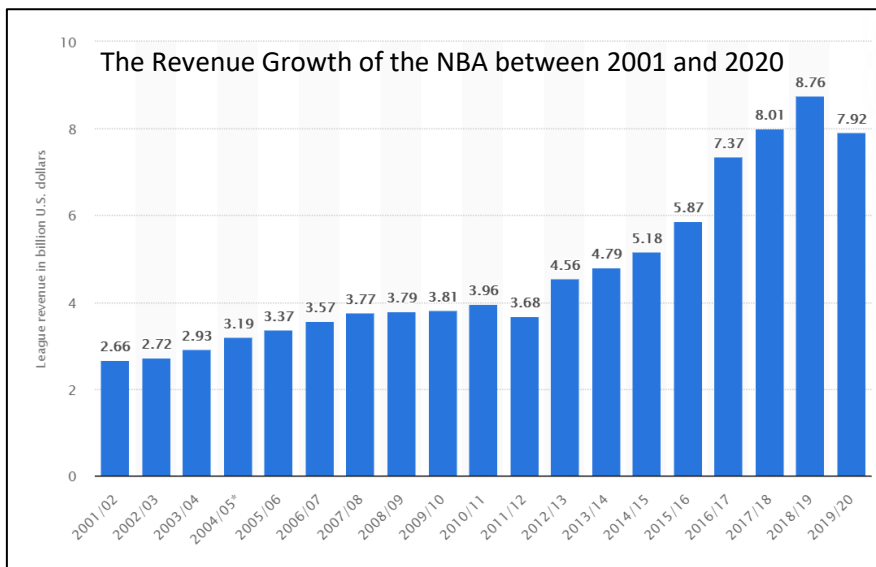
composed of numerous subgroups of people, and each subgroup has distinct needs and wants that will result in disparities in consumers' perceptions, interests and behaviours across subgroups (Cambra-Fierro & Melero-Polo, 2017; Kotler & Armstrong, 2018). Therefore, additional research on customer loyalty is required in the sports industry (Funk et al., 2016; Rohman, 2019; Theodorakis et al., 2013; Yun et al., 2020). Customer loyalty is often referred to as 'spectator loyalty', 'fan loyalty' or 'team loyalty' in the sporting context. These terms have been used interchangeably in several sports marketing studies (e.g., Bauer et al., 2008; Benesbordi & Esmaeili, 2019; Biscaia et al., 2013; Koo et al., 2008; Rohman, 2019; Tsiotsou, 2013; Yoshida et al., 2014; Yun et al., 2020). To date, no published literature has investigated customer loyalty in the context of the National Basketball Association (NBA).

1.2 The National Basketball Association

The NBA, founded in 1946, is a men's professional basketball league in North America (Hubbard, 2000). An NBA season usually runs from October to the following June, including the regular season, playoffs and finals (NBA, 2019a). The NBA league is currently composed of 30 teams, and each team plays 82 games during the regular season (NBA, 2019a).

The NBA is considered one of the most popular professional spectator sports leagues in the world (USATODAY, 2018). The NBA, the Major League Baseball (MLB), the National Hockey League (NHL) and the National Football League (NFL) are the four major professional sports leagues in the United States and Canada (The Daily Gazette, 2021). Raphael (2019) suggests that the NBA is on the rise in popularity with no decline in sight for the foreseeable future. In the United States and Canada, the NBA has surpassed the MLB as the second most popular sports league and is overtaking the NFL in popularity (McCarthy, 2019; Raphael, 2019). The 2018-2019 regular season is the fifth consecutive season that the NBA has had an overall attendance of close to 22 million spectators (NBA, 2019b). In that season, 760 NBA games were sold out, achieving more than 95 percent of each arena's capacity (NBA, 2019b).

The NBA has also seen significant revenue growth since the 2001-2002 season (Gough, 2021a). The revenue declined slightly in the 2019-2020 season, due to the suspension of the season due to the Covid-19 pandemic (Gough, 2021a; NBA, 2021a) (see Figure 1.1). The league has four primary revenue streams - broadcasting rights, merchandising, sponsorships, and ticket sales (McFarlane, 2020). In the 2018-2019 season, the league generated approximately \$8.76 billion in revenue, which was the third-highest among all professional sports leagues in the world (Gough, 2021a). The average NBA team valuation also increased to approximately \$1.9 billion in 2018, more than triple the team valuation in 2013 (Badenhausen, 2019).



Data Source: Statista.com

Figure 1.1 The Revenue Growth of the NBA

The NBA’s revenue growth was achieved not just because of domestic viewership and sponsors but also international expansion as a result of the NBA’s global marketing strategy (Adgate, 2018; Parisa & Maatern, 2021). The league has opened 12 international offices on four continents and broadcasted games to more than 200 countries and territories (Parisa & Maatern, 2021). An estimated one billion people in the world have access to the NBA finals (USATODAY, 2018). The digital subscriptions for the League Pass also set a record in the 2018-2019 NBA season, up 21 percent compared to the previous season’s record (NBA, 2019b). As of April 2019, the league had more than 1.6 billion ‘likes’ and followers combined across all league, team and player social media platforms worldwide (NBA, 2019b).

Despite its popularity, the NBA still faces intense competition from rival leagues in different sports (LA Times, 2019). Besides the NBA, three other major professional sports also have a large fanbase in the United States and Canada (McCarthy, 2019). Individual sports, such as golf, tennis and boxing, and college sports are also surging in popularity (Akabas, 2021). Moreover, competition has intensified because of the rise of alternative leisure and entertainment activities (Dick & Schwarz, 2020; Dick & Turner, 2007). According to Deloitte (2019), people in the United States spend most of their spare time on digital media, watching TV and socialising. Attending sports events accounts for a relatively small proportion of people’s total spare time (The U.S. Bureau of Labor Statistics, 2020).

Furthermore, the ticketing revenue of the NBA has also experienced a slight decrease in the percentage of the total revenue (Gough, 2021b). In the 2010-2011 regular season, ticketing revenue accounted for 29.14 percent of the total revenue of the NBA (Gough, 2021b). The figure dropped to 22.09 percent in the 2018-2019 regular season (Gough, 2021b). Although the league

has other sources of income, ticket sales are a stream of revenue that can be influenced by marketing techniques (DeGaris, 2016; Dick & Turner, 2007). Ticket sales may also have a direct impact on other income sources, such as parking, concessions, merchandise sales, and sponsorships (Alvarado-Vargas & Zou, 2019; Dick & Turner, 2007; Lee, 2015). Therefore, there is a need for NBA teams to develop and implement effective strategies to increase home game attendance (Dick & Schwarz, 2020; Dick & Turner, 2007; Lim et al., 2019).

Unfortunately, some NBA players, coaches and or other key staff have been involved in a variety of on- and off-court controversies, including sexual assault, drug use, illegal betting, racism, and on-field violence (Golliver, 2019; Martin, 2014). For example, Kobe Bryant, the former NBA star player, was accused of sexual assault in 2003 (Wise & Markels, 2003). The incident significantly harmed his public image and caused some of his fans to abandon him (Wise & Markels, 2003). Another example comes from the former owner of the Los Angeles Clippers, Donald Sterling, who made racist comments against African Americans in 2014, which resulted in numerous NBA fans boycotting the team (Martin, 2014). The Dallas Mavericks team's hostile working environment, ranging from sexual harassment to domestic violence, has also received criticism from the public (Wertheim & Luther, 2018). These on- and off-court controversies may have negative impacts on the league's image and game attendance (Abeza et al., 2020; Bloxsome et al., 2020; Meng & Pan, 2013).

Because of all the challenges facing the NBA, the league needs to develop and implement effective marketing strategies to remain competitive and maintain long-term sustainability in such a highly competitive business environment (Dick & Schwarz, 2020; Dick & Turner, 2007; Lim et al., 2019).

1.3 Research Gaps

Three research gaps have been identified as follows:

Research Gap 1 relates to the lack of published research examining team loyalty and its antecedents in the context of the NBA. Although the marketing literature has identified a range of antecedents of fan loyalty in the professional sports industry (e.g., Bauer et al., 2008; Clemes et al., 2011; Theodorakis et al., 2013; Yun et al., 2020), several scholars note that factors that foster fan loyalty may vary across context (Bauer et al., 2008; Bee & Havitz, 2010; Biscaia et al., 2013; Watanabe et al., 2013; Yoshida et al., 2014). A lack of consideration of characteristics specific to the NBA context may limit the application of the results from previous studies.

Research Gap 2 relates to a gap in the published marketing literature on the interrelationships among seven important higher-order marketing constructs in the context of the NBA. The sports marketing literature suggests that service quality, spectator satisfaction, team image, negative

team behaviour, team engagement, and player loyalty may all have a direct or indirect effect on fans' behavioural intentions (e.g., Alvarado-Vargas & Zou, 2019; Bauer et al., 2008; Bloxsome et al., 2020; Lee & Kwak, 2017; Meng & Pan, 2013; Rohman, 2019; Yoshida et al., 2014; Yun et al., 2020). However, to date, no published research has analysed the interrelationships among these constructs within a single comprehensive framework in the NBA or in the professional sports setting. A comprehensive analysis will foster a deeper understanding of the interrelationships among these constructs and determine their relative impact on fan loyalty (Rohman, 2019; Theodorakis et al., 2013; Yun et al., 2020).

Research Gap 3 relates to the limited published research that has examined the roles of gender and age in the behavioural intentions of NBA fans. Findings from prior studies on various service industries have shown that consumers' perceptions and behaviours may be influenced by demographic characteristics, such as age and gender (Cambra-Fierro & Melero-Polo, 2017; Herrando et al., 2019; Jones & Byon, 2020; Kamath et al., 2021). Although some researchers have investigated age or gender differences among NBA fans (e.g., Mondello & Gordon, 2015; Zhang et al., 1995), their studies were primarily based on qualitative or descriptive analysis and did not empirically test the differences in the path models. Several scholars suggest that a comprehensive analysis of age and gender differences may help marketing practitioners target customers more precisely and carry out marketing strategies in a more focused way (Cambra-Fierro & Melero-Polo, 2017; Kotler & Armstrong, 2018; Martins et al., 2012; McDonald & Dunbar, 2012).

1.4 Research Objectives

In order to fill the research gaps identified above, the present research has four research objectives:

1. To identify the antecedents of team loyalty in the NBA;
2. To examine the interrelationships among team loyalty, service quality, spectator satisfaction, team image, negative team behaviour, team engagement, and player loyalty in the NBA;
3. To examine the potential mediating effects among related constructs in the NBA;
4. To examine whether NBA spectators' perceptions of related higher-order marketing constructs vary across age and gender groups.

1.5 Research Contributions

In satisfying the four research objectives, the present research will make several theoretical and practical contributions.

From a theoretical perspective, this research provides a single comprehensive framework that examines the interrelationships, including the mediating effects, among seven important higher-order marketing constructs in relation to the NBA. A comprehensive analysis will foster a deeper understanding of the interrelationships among these constructs and determine their relative effect on fan loyalty (Bauer et al., 2008; Rohman, 2019; Tsiotsou, 2013; Yun et al., 2020). The comprehensive modelling approach used in the present research will provide a platform for future studies that examine the complex interrelationships among these constructs in another sporting context. Furthermore, the present research offers insights into the effects of negative team behaviour and player loyalty on other higher-order marketing constructs in the professional sports industry. Lastly, the empirical findings from the present research will contribute to the understanding of age and gender differences in the sporting context.

This research also has important managerial implications. Understanding the antecedents of team loyalty and their interrelationships can help NBA practitioners shape their marketing strategies to develop and retain loyal fans. The research findings will also contribute to the understanding of how age and gender would influence fans' perceptions and behaviours in the NBA. Understanding age and gender differences may enable NBA practitioners to develop demographic segmentation strategies based on gender and age. Segmentation makes it possible for NBA teams to target their customers more precisely and carry out marketing strategies in a more focused way (Martins et al., 2012; McDonald & Dunbar, 2012).

1.6 Structure of the Thesis

Chapter 1 describes the research background, including the problem setting, the NBA, research gaps, research objectives, and potential research contributions.

Chapter 2 reviews relevant published literature pertaining to the seven higher-order marketing constructs used in the present research. The published literature related to gender and age differences is also discussed in this chapter.

Chapter 3 discusses the development of the conceptual research model and outlines 22 hypotheses associated with the various research objectives.

Chapter 4 discusses the research methodology, including the questionnaire design, the data collection procedure, and the data analysis procedure.

Chapter 5 presents the results of the response rate and preliminary data analysis, the demographic information of the sample, the descriptive analysis, the confirmatory factor analysis (CFA), and the hypothesis tests.

Chapter 6 evaluates and draws conclusions from the research findings. Potential research contributions, impacts of the COVID-19 pandemic, limitations of this research, and directions for future research are also discussed in this chapter.

Chapter 2

Literature Review

2.1 Introduction

This chapter starts with an overview of the published marketing literature related to sports fan behavioural intention in the context of the NBA. Given that to date there is limited published NBA marketing literature, this chapter also reviews broader relevant published literature in other service industries, such as the professional sports, sports tourism and hospitality industries. Reviewing literature from a broader service marketing perspective may help provide insights into the domain of the seven higher-order marketing constructs used in this research: team loyalty; service quality; spectator satisfaction; team image; team engagement; negative team behaviour; and player loyalty. The interrelationships among these constructs are also discussed in this chapter.

2.2 The Published Marketing Literature about the NBA

To date, limited published marketing research has examined fans' behavioural intentions in the context of the NBA. Most of the published literature focused on factors influencing NBA game attendance rates. The antecedents of team loyalty and their interrelationships were not examined in any of these studies.

Zhang et al. (1995) conducted a study examining variables that affected fans' decisions to attend NBA games. The research data were collected from 861 NBA fans in the 1993-1994 NBA season. The collected data were analysed using exploratory factor analysis (EFA), multiple regression analysis, and multivariate analysis of variance. Four factors ('game promotions', 'home team', 'the opposing team', and 'schedule convenience') that positively influenced NBA game attendance were identified. However, Zhang et al. (1995) did not assess the relationship between fans' decision-making and other game attendance-related variables, such as spectator satisfaction, team image, and team engagement. Furthermore, game attendance is different from team loyalty (Hill & Christine Green, 2012). The research of Zhang et al. (1995), however, can be used as a basis for examining team loyalty and its antecedents in the NBA.

Zhang et al. (2004) assessed the relationship between special service programmes for NBA seasonal ticket holders and their game attendance. The authors used EFA and multiple regression analysis to analyse the data (N=350). Four factors ('representative', 'benefit', 'opportunity', and 'socialisation') of exclusive service programmes were found to influence game attendance by NBA season ticket

holders. Zhang's (2004) research focused on exclusive services for season ticket holders, so the research findings may not apply to general NBA fans.

Mondello and Gordon (2015) conducted a qualitative study on the overall game experience of season ticket holders of the Orlando Magic. The authors found that 'family influence', 'peer group influence', and 'game promotions' were the factors motivating fans to attend the Orlando Magic home games. 'Finances', 'game schedule', 'alternative entertainment activities', and 'arena atmosphere' were barriers to game attendance (Mondello & Gordon, 2015). However, the authors did not provide statistical support for their research findings.

Using secondary data, Jane (2016) investigates the relationship between star players and game attendance in the NBA during the 2010-2011 and 2011-2012 seasons. Applying Tobit regression, the author notes that the star effect is positively related to NBA game attendance rate.

Based on a dataset retrieved from NBA-related posts and comments on Reddit, Zhang et al. (2018) note that team performance has a significant impact on NBA fans' behavioural intentions.

Using secondary data, Lim et al. (2019) test the relationship between attendance determinants and game attendance in the NBA. Using hierarchical linear regression modelling, the authors note that 20 game-level and season-level factors (e.g., 'home team's payroll', 'home team quality', and 'game uncertainty') are positively related to game attendance. The findings of Lim et al.'s (2019) research may need further examination, as secondary data may not answer researchers' specific research questions (Goodwin, 2012; Sun & Lipsitz, 2018).

During the 2017-2018 NBA regular season, Dick and Schwarz (2020) investigate the opinions of the marketing directors of 30 NBA teams in terms of the value of 20 marketing techniques to attract home game attendance. The authors note that 'face-to-face meeting with business', 'email offers', 'group sales', 'social media' and 'promoting star players' are the top five most valuable techniques to increase home game attendance as perceived by the NBA marketing directors.

Focusing on three NBA venues - Amway Center in Orlando, Barclays Center in Brooklyn, and Target Center in Minneapolis, Naraine et al. (2020) conduct a study to investigate NBA fans' Wi-Fi usage and online activities while attending games at the venues. The authors note that Wi-Fi usage peaks at the halftime breaks.

Analysing 6,389,698 Twitter posts from each NBA team, Gong et al. (2021) find that discussions and sentiments regarding tanking of NBA teams are strongly related to game attendance between the 2013/14 and 2017/18 NBA seasons.

2.3 Customer/ Team Loyalty

Oliver (1999, p. 34) defined customer loyalty as a “deeply held commitment to rebuy or re-patronise 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) proposed a four-stage loyalty model based on the level of customers’ commitment to a product or a service provider. The model illustrates that customer loyalty follows a pattern from cognition to affection, to conation and action. The first stage is ‘cognitive loyalty’. At this stage, the cognition of a product or service is formed by customers based on their prior knowledge or recent experience with the product or the service. In the second stage of ‘affective loyalty’, customers develop a favourable attitude toward a brand through cumulative satisfying user experience. The third stage, ‘conative loyalty’, refers to customers’ repurchase intention. The intention is a result of repeated positive affection toward the brand. In the fourth stage of ‘action loyalty’, customers’ repurchase intention is transformed into action.

The concept of customer loyalty has been adopted to the sporting context, alternatively referred to as ‘spectator loyalty’, ‘fan loyalty’ or ‘team loyalty’ (e.g., Bauer et al., 2008; Rohman, 2019; Stroebel et al., 2021; Wang et al., 2011; Wu et al., 2012; Yoshida et al., 2014; Yun et al., 2020). These terms have often been used interchangeably in the sports marketing literature (e.g., Bauer et al., 2008; Benesbordi & Esmaili, 2019; Kim et al., 2020; Rohman, 2019; Stroebel et al., 2021; Tsiotsou, 2013; Wang et al., 2011; Wu et al., 2012; Yoshida et al., 2014; Yun et al., 2020). In the focus group discussions of the present research, participants suggested that these loyalty terms were approximate to each other, but ‘spectator loyalty’ was a broader concept which could refer to fans’ loyalty towards the team, the league or the brand. ‘Team loyalty’ was used in the present research, defined as fans’ deeply held commitment to a sports team that could influence their cognitive thoughts and behaviours (Rohman, 2019; Tsiotsou, 2013; Wu et al., 2012).

There are two main approaches to conceptual customer loyalty: the behavioural approach and the attitudinal approach (Bauer et al., 2008; Channoi et al., 2018; Park et al., 2019; Yun et al., 2020). Under the behavioural approach, customer loyalty refers to customers’ repeated consumption of the same product or service over time (Bauer et al., 2008; Park et al., 2019; Zeithaml et al., 1996). The attitudinal approach views customer loyalty as the psychological connection or attachment of customers to a product or service (Bauer et al., 2008; Wu et al., 2012; Yun et al., 2020). In the professional sports context, behavioural loyalty often represents fans’ repurchase intention and referral intention, such as attending games repeatedly and spreading positive word-of-mouth (Bauer et al., 2008; Theodorakis et al., 2013; Wang et al., 2011; Yoshida et al., 2014; Yun et al.,

2020). Attitudinal loyalty often refers to fans' willingness to maintain their commitment to a sports team (Bauer et al., 2008; Tachis & Tzetzis, 2015; Yun et al., 2020). No consensus has been reached as to which perspective is preferred because each explains loyalty in different contexts (Chung et al., 2019; Wang et al., 2011; Wu et al., 2012). Researchers note that attitudinal loyalty is a key predictor of actual behaviour and may lead to behavioural loyalty (Park & Kim, 2000; Wu et al., 2012; Yun et al., 2020). Therefore, the present research adopted the behavioural approach to measure team loyalty.

Fan loyalty has been considered an essential contributor to the success of sports organisations in a competitive business environment (Bauer et al., 2008; Bodet & Bernache-Assollant, 2011; Chung et al., 2019; Theodorakis et al., 2013; Yun et al., 2020). Sports organisations are now experiencing intense competition because of the recent rise of alternative leisure and entertainment activities (Bauer et al., 2008; Dick & Schwarz, 2020; Mullin et al., 2014; Rohman, 2019; Theodorakis et al., 2013; Wu & Cheng, 2018). Developing effective marketing strategies to gain competitive advantage and maintain long-term sustainability has become a top priority for many sports organisations (Chung et al., 2019; Dick & Schwarz, 2020; Kim et al., 2020; Lee et al., 2017; Rohman, 2019; Theodorakis et al., 2013; Tsiotsou, 2013).

The sports marketing literature suggests that fan loyalty helps sports organisations improve financial performance and gain long-term competitive advantage (Bee & Havitz, 2010; Bee & Kahle, 2006; Lee et al., 2017; Rohman, 2019; Wu et al., 2012). Furthermore, researchers note that understanding fan loyalty and its antecedents is especially critical in the professional sports industry because the game outcome is often unpredictable, but fan loyalty helps ensure a stable fan following even when the team's performance falters (Biscaia et al., 2013; Gladden & Funk, 2001; Kim et al., 2020; Lee et al., 2020; Theodorakis & Alexandris, 2008; Theodorakis et al., 2013).

Customer loyalty has been analysed in various service industries, such as hospitality (Channoi et al., 2018; Hallak et al., 2018; Hussein, 2018), transports (de Ona, 2021; Hapsari et al., 2017), education (Clemes et al., 2013; Khawaja et al., 2021; Sultan & Wong, 2019), tourism (Jeong & Kim, 2020; Li et al., 2020; So et al., 2016), and sports (Park et al., 2019; Rohman, 2019; Yun et al., 2020).

Although a diversity of antecedents of customer loyalty has been identified across these industries, several scholars note that factors that foster customer loyalty may vary within and across service industries (Bee & Havitz, 2010; Cambra-Fierro & Melero-Polo, 2017; Channoi et al., 2018; Funk et al., 2016; Watanabe et al., 2013). Therefore, additional research is required in the sports industry (Funk et al., 2016; Theodorakis et al., 2013; Yun et al., 2020).

Table 2.1 Previous Research on Loyalty in Professional Team Sports

Study	Context	Determinant(s)	Endogenous Variable(s)
Williams and Son (2022)	The Ultimate Fighting Championship	Team Logo Redesign	Behavioural Intention
Finch et al. (2022)	Professional Sports (unclassified)	Fan Motivators; Fan Attitude	Fan Engagement
Pedersen et al. (2022)	Professional Football in the USA	Spectator Dysfunctional Behaviour	Spectator Enjoyment
Karg et al. (2021)	Professional Sports (unclassified) in Australia	Team Performance; Loyalty	Season Tickets Holder Retention
Mayer and Hungenberg (2021)	Professional Hockey in the USA	Motives; Contextual, Constrains; Team Attendance	Team Fandom
Papadimitriou et al. (2021)	Professional Basketball and Soccer in Greece	Experience; Socialization; Aesthetics; Locality	Satisfaction; word-of-mouth; Purchase Intention; Price Premium"
Yoshida et al. (2021)	Professional Baseball in Japan	Stadium Attachment; Satisfaction	Loyalty

Strobel et al. (2021)	Professional Basketball in Germany	Merchandise Usage; Team Identification; Fan Satisfaction	Team Loyalty
Kim et al. (2020)	Australian Rules Football	Spectator Motivation; Involvement	Spectator Loyalty
Kucharska et al. (2020)	Professional Soccer in Poland	Personal Brand Authenticity; Personal Brand Identification	Attitudinal Loyalty; Behavioural Loyalty
Yun et al. (2020)	Australian Rules Football	Fan Engagement; Fan Satisfaction; Team Image; Attitudinal Loyalty	Behavioural Loyalty
Benesbordi and Esmaeili (2019)	Professional Soccer in Iran	Service Quality; Fan Attachment; Fan Social Identity	Fan Loyalty
Lee et al. (2019)	Australian Rules Football	Relationship Quality	Re-attend Intention; Referral Intention
Rohman (2019)	Professional Soccer in Indonesia	Experience Quality; Spectator Satisfaction; Team Image	Spectator Loyalty
Wang and Tang (2018)	Professional Baseball in Taiwan	Identification with Sports Team; Identification with Sports Team Brand	Sport Team Brand Loyalty
Chen et al. (2017)	Professional Baseball in Taiwan	Negative Information; Team Image; Fan Identification	Purchase Intention

Lee and Kang (2015)	Professional Basketball in South Korea	Satisfaction; Team Identification	Behavioural Intention
Karjaluoto et al. (2015)	Professional Hockey in Finland	Brand Personality; Team Identification	Behavioural Loyalty Attitudinal Loyalty
Yoshida et al. (2015)	Professional Soccer in Japan	Team Identification; Satisfaction	Behavioural Intention
Moreno et al. (2014)	Professional Basketball in Spain	Service Quality; Perceived Value; Satisfaction	Behavioural Intention
Yoshida et al. (2014)	Professional Soccer in Japan	Fan Engagement	Behavioural Intention
Biscaia et al. (2013)	Professional Soccer in Portugal	Service Quality; Ticket Price; Satisfaction	Behavioural Intention
Byon et al. (2013)	Professional Team Sports in the USA	Service Quality; Perceived Value	Behavioural Intention
Theodorakis et al. (2013)	Professional Soccer in Greece	Service Quality; Satisfaction	Behavioural Intention
Tsiotsou (2013)	Professional soccer in Europe	Team Involvement; Team Trust; Team Self- Expression; Team Attachment	Team Loyalty
Wu et al. (2012)	Professional Baseball in Taiwan	Player Identification; Team Identification	Re-patronage Intention
Clemes et al. (2011)	Professional Rugby in New Zealand	Service Quality; Perceived Value: Satisfaction; Fanship	Behavioural Intention
Wang et al. (2011)	Professional Baseball in Taiwan	Fan Motives	Loyalty

Yoshida and James (2010)	Professional Baseball in Japan College Football in the USA	Service Quality; Core Product Quality; Service Satisfaction; Game Satisfaction	Behavioural Intention
Bauer et al. (2008)	Professional Soccer in Germany	Team Image	Fan Loyalty
Koo et al. (2008)	Women's College Basketball in the USA	Service Quality; Satisfaction	Behavioural Intention
Theodorakis and Alexandris (2008)	Professional Soccer in Greece	Service Quality	Behavioural Intention
Brady et al. (2006)	Professional Baseball in the USA	Service Quality; Service Value; Satisfaction	Behavioural Intention

2.4 Service Quality

According to Parasuraman et al. (1988), service quality refers to “the discrepancy between consumers’ perceptions of service offered by a particular firm and their expectations about firms offering such services” (p.14). Several scholars suggest that service quality helps organisations promote customer satisfaction, enhance brand image, and retain customers (Brady & Cronin, 2001; Jevons, 2001; Zeithaml et al., 1996). Although the significance of service quality has been generally recognised, there are disagreements on how it should be conceptualised and measured (Channoi et al., 2018; Rodrigues, 2013). Brady and Cronin (2001) note that “the conceptualisation and measurement of service quality perceptions have been the most debated and controversial topics in the service marketing literature” (p.34).

Brady and Cronin (2001) conclude that the conceptualisation of service quality can be grouped into two categories: the ‘Nordic perspective’; and the ‘American perspective’. The Nordic perspective (Grönroos, 1982, 1984) suggests that service quality contains two dimensions: ‘functional quality’; and ‘technical quality’. The American perspective (Parasuraman et al., 1988) uses some features, such as ‘reliability’, ‘responsiveness’, ‘empathy’, ‘assurances’, and ‘tangibles’, to conceptualise service quality. The measurement scales of service quality are discussed in the following subsections.

2.4.1 The Nordic Perspective of Service Quality

The Nordic perspective views perceived service quality as the outcome of consumers’ evaluation process of comparing the ‘expected service’ with the ‘perceived service’ (Grönroos, 1984). Grönroos (1984) developed the ‘Nordic model’ for measuring perceived service quality. In the model, service quality has two dimensions: ‘technical quality’; and ‘functional quality’. Technical quality relates to the technical outcome of the service process, while functional quality represents how the service is delivered (Grönroos, 1984).

2.4.2 The American Perspective of Service Quality

According to the American perspective, perceived service quality is the difference between service expectation and service performance (Parasuraman et al., 1988). Proponents of the American perspective suggest that consumers’ perceptions of service quality are multi-dimensional (Brady & Cronin, 2001). Parasuraman et al. (1988) developed the SERVEQUAL scale to measure service quality. The scale contains five dimensions: ‘tangibles’; ‘reliability’; ‘responsiveness’; ‘assurance’; and ‘empathy’. Each dimension is described as follows:

Tangibles: Physical facilities, equipment, and appearance of personnel.

Reliability: Ability to perform the promised service dependably and accurately.

Responsiveness: Willingness to help customers and provide prompt service.

Assurance: Knowledge and courtesy of employees and their ability to inspire trust and confidence.

Empathy: Caring individualised attention the firm provides its customers (Parasuraman et al., 1988, p. 23).

Despite the widespread application of the SERVQUAL scale, it faced considerable criticism from both academics and practitioners (Cronin & Taylor, 1992, 1994; Teas, 1994). The theoretical issues of SERVEQUAL are mainly concerned with its poor reliability and validity (Brady & Cronin, 2001; van Dyke et al., 1997). SERVEQUAL also has some practical problems, as the 'expectation' construct is ambiguous and hard to define (Cronin & Taylor, 1992, 1994; Teas, 1994).

2.4.3 The Performance-based Measure (SERVEPERF)

Cronin and Taylor (1992) developed a performance-based model: SERVEPERF. The authors used the scale to measure service quality in four industries - banking, pest control, dry cleaning, and fast food. Their research findings revealed that SERVEPERF outperformed SERVEQUAL by explaining more of the variation in service quality. The authors also noted that SERVEPERF exhibited better predictive and convergent validity than SERVQUAL. Several researchers have adopted the performance-based approach to measure service quality in various service industries (e.g., Channoi et al., 2018; Hapsari et al., 2017; Jae Ko et al., 2011). Thus, a performance-based scale is used to measure service quality in the present research.

2.4.4 Measures of Service Quality in Spectator Sports

Several measurement scales have been developed to measure service quality in the sports marketing literature (Theodorakis & Alexandris, 2008). McDonald et al. (1995) introduced the TEAMQUAL scale to measure service quality in the North American professional basketball setting. The scale contained 39 items which were derived from the five dimensions of SERVEQUAL (see Section 2.4.2). The importance-weighted scores for each dimension were used to determine overall service quality.

In professional basketball in Greece, Theodorakis et al. (2001) proposed a service quality scale named SPORTSERVE. The scale contained 22 items under five dimensions: 'tangibles'; 'responsiveness'; 'access'; 'security'; and 'reliability'.

Kelley and Turley (2001) introduced a nine-factor service quality measurement scale in collegiate basketball in the United States. The nine factors were 'employees', 'price', 'facility access',

'concessions', 'fan comfort', 'game experience', 'showtime', 'convenience', and 'smoking'. However, the reliability of the nine-factor scale was not empirically tested by the authors.

2.4.5 Hierarchical Model of Service Quality

Several scholars have noted that service quality is a multilevel and hierarchical construct (Brady & Cronin, 2001; Carman, 1990; Dabholkar et al., 1996). Dabholkar et al. (1996) introduced a hierarchical model to measure service quality in the retail industry. In their model, service quality has five first-order factors: 'physical aspects'; 'reliability'; 'personal interaction'; 'problem solving'; and 'policy'. The authors found that the hierarchical model outperformed the single-level model in measuring service quality, by capturing the complexity of the human evaluation processes.

Brady and Cronin (2001) note that consumers assess service quality through three levels - 'overall', 'primary dimensions', and 'subdimensions'. The authors introduce a hierarchical model in which service quality is a third-order construct that contains three primary dimensions: 'interaction quality'; 'physical environment quality'; and 'outcome quality'. Each primary dimension comprises several subdimensions. Interaction quality consists of three subdimensions- 'attitudes', 'behaviours', and 'the expertise of the service personnel'. Physical environment quality contains three subdimensions- 'ambient conditions', 'facility design', and 'social factors'. Outcome quality comprises 'waiting time', 'tangibles', and 'valance'. Brady and Cronin (2001) conclude that customers "aggregate their evaluations of the subdimensions to form their perceptions of an organization's performance on each of the three primary dimensions, and those perceptions then lead to an overall service quality perception" (p.37).

The hierarchical model developed by Brady and Cronin (2001) offers a single comprehensive framework to measure service quality. The model is an integration of the Nordic and American school models (Brady & Cronin, 2001). There have been numerous applications of Brady and Cronin's (2001) hierarchical model in various service industries, such as education (Teeroovengadum et al., 2016), transport (Hapsari et al., 2017), healthcare (Mohamed & Azizan, 2015), hospitality (Channoi et al., 2018), banking (Bakar et al., 2017), and sports (Clemes et al., 2011; Xiao et al., 2020).

Apart from the various measurements for service quality, the interrelationships between service quality and other marketing constructs, such as customer loyalty, customer satisfaction, customer engagement, and brand image, have also been examined in the marketing literature. The following subsections discuss these interrelationships in detail.

2.4.6 The Relationship between Service Quality and Brand Image

The relationship between service quality and brand image had been widely examined in various service industries. For example, in a study of the Chinese education industry, Clemes et al. (2013) find that students' perceived service quality positively affects their perception of university image. Similarly, in the Indonesian advertising industry, Chaniago (2016) note that consumers who perceive high service quality tend to form a positive image of the brand. The positive service quality-brand image linkage has also been found in other service industries, such as transport (de Ona, 2021; Hapsari et al., 2017), restaurants (Hussein, 2018), and accommodation (Channoi et al., 2018).

Studies on the relationship between service quality and brand image are also common in the sporting context. Based on survey data collected from 250 Indonesian soccer fans, Rohman (2019) note that a high level of perceived service quality may significantly enhance the image of the soccer team. Similarly, in the international sporting events setting, Moon et al. (2013) empirically test the interrelationships among service quality, event destination image, and spectators' behavioural intention. Their research findings suggest that there is a significant and positive effect of service quality on destination image. Likewise, Yamaguchi et al. (2015) find that service quality is a strong predictor of destination image in the context of the spring training camp of a Japanese professional baseball team. The empirical findings of Jeong and Kim (2020) research on sports tourism also support the service quality-event image link. To date, there is no published literature examining the relationship between service quality and team image in the NBA setting.

2.4.7 The Relationship between Service Quality and Customer Engagement

The effect of service quality on customer engagement has been investigated in different research fields. For example, in the context of Shanghai Formula One, Jones et al. (2019) find that spectators' perceptions of interaction quality and physical environment quality may positively impact fan engagement. In the Indonesian banking industry, Abror et al. (2019) also find a positive path from service quality to customer engagement. The authors note that high perceived service quality may create a bond between customers and the bank. The bond may in turn encourage customers to interact and engage with the bank. Similarly, Roy et al. (2018) note that service quality is a strong driver of customer engagement in the Indian telecommunications industry. Their research findings show that high service quality enhances the firm-customer relationship, which will lead to customers' engagement behaviours. The engagement behaviours include spreading positive word-of-mouth, interacting with other customers, and providing constructive suggestions and feedback to the firm (Roy et al., 2018). The empirical findings from Vo et al.'s (2020) research on the luxury hotel industry in Vietnam also reveal that service quality exerts a significant and

positive impact on customer engagement. The positive relationship between service quality and customer engagement is also found by Islam et al. (2019) in the Indian hospitality industry. The authors note that when customers receive high service quality from a firm, they tend to offer value back to the firm by exhibiting engagement behaviour such as helping other customers and providing feedback. However, in the European airline context, Prentice et al. (2019) note that service quality does not show a significant, direct effect on customer engagement.

To date, only limited published research has examined the effect of perceived service quality on team engagement in the sporting context.

2.4.8 The Relationship between Service Quality and Customer Loyalty

Numerous studies have assessed the relationship between service quality and customer loyalty, with mixed findings reported (e.g., Benesbordi & Esmaeili, 2019; Channoi et al., 2018). For example, Prastiwi et al. (2021) empirically examine the interrelationships among customer loyalty, customer satisfaction, and service quality in the context of Islamic Banks in East Java, Indonesia. The authors find that service quality exerts a direct significant positive impact on customer loyalty.

In professional spectator sports in the United States, Byon et al. (2013) note that service quality contains two dimensions: game amenities and venue quality. These two dimensions exert a significant and positive direct effect on spectators' intentions to reattend the game and spread positive word-of-mouth (Byon et al., 2013). Surveying 387 spectators of the Iranian Premier League soccer team, Benesbordi and Esmaeili (2019) note that service quality is a significant driver of fan loyalty. Likewise, the findings from Biscaia et al. (2013) study on the Portuguese professional soccer league revealed a positive influence of service quality on fans' behavioural intentions to attend future games and make a recommendation. In a study of the public sports and fitness centres in Greece, Avourdiadou and Theodorakis (2014) also note a significant and positive path from service quality to customer loyalty among novice customers. The positive service quality-loyalty linkage has also been found in Alexandris et al.'s (2017) research on international marathon events.

However, the direct effect of service quality on customer loyalty has been found nonsignificant by several researchers (e.g., Channoi et al., 2018; Hapsari et al., 2017; Koo et al., 2008). For example, in women's college basketball in the United States, Koo et al. (2008) noted that service quality did not show a significant direct impact on spectators' behavioural intentions. Similarly, in the Indonesian airline industry, Hapsari et al. (2017) find that there is no significant direct positive relationship between service quality and customer loyalty. The findings of Channoi et al.'s (2018) study on the Thailand beach resort industry also reveal that service quality is not significantly correlated to customer loyalty.

The mixed findings on the service quality-customer loyalty link highlight the need for further empirical work on the relationship between the two constructs in different settings (Arnerić et al., 2016; Channoi et al., 2018).

2.4.9 The Relationship between Service Quality and Customer Satisfaction

Service quality has been considered a robust driver for customer satisfaction in the marketing literature (Channoi et al., 2018; Hapsari et al., 2017; Rohman, 2019; Son et al., 2018; Xiao et al., 2020). In the Indonesian airline industry, Hapsari et al. (2017) note that service quality positively influences the satisfaction levels of passengers. The findings from Channoi et al.'s (2018) study on the Thailand beach resort industry also reveal a significant positive service quality-customer satisfaction link.

A positive effect of service quality on customer satisfaction has also been found in the sports industry (e.g., Calabuig Moreno et al., 2014; Koo et al., 2008; Rohman, 2019; Son et al., 2018). In women's college basketball in the United States, Koo et al. (2008) noted that spectators who perceived a higher level of service quality tended to be more satisfied. Likewise, the positive path from service quality to spectator satisfaction is also observed in Calabuig Moreno et al.'s (2014) research on the Spanish ACB basketball league. Similarly, in New Zealand professional rugby union, Clemes et al. (2011) examined the interrelationships among service quality, spectator satisfaction, perceived value, and fanship. Their research findings indicate that service quality has a significant positive effect on spectator satisfaction. The positive relationship between service quality and spectator satisfaction is also found by Theodorakis et al. (2013) in the European professional football context and by Rohman (2019) in the Iranian professional soccer league. Likewise, in a recent study on the Korean Ladies Professional Golf Association (LPGA) tournament, Son et al. (2018) note that spectator satisfaction is significantly influenced by perceived service quality.

2.5 Customer/ Spectator Satisfaction

Customer satisfaction is recognised as a superordinate construct which contributes to an organisation's long-term competitive advantage by enhancing the organisation's reputation and improving profitability (Abror et al., 2019; Brady & Robertson, 2001; Cronin et al., 2000; Cronin & Taylor, 1992; Fornell, 1992; Zeithaml et al., 2017). Customer satisfaction is one of the best criteria for service evaluation and is especially important when the service performance is difficult to maintain for both tangible and intangible reasons (Cronin & Taylor, 1992; Zeithaml et al., 2017). Therefore, the successful delivery of customer satisfaction becomes one of the key elements of marketing strategies (Abror et al., 2019; Channoi et al., 2018; Hapsari et al., 2017; Yoshida & James, 2010).

While there is widespread acknowledgement of the significance of customer satisfaction, its definition varies across the marketing discipline (Boulding et al., 1993; Hapsari et al., 2017; Yun et al., 2020). According to Churchill and Surprenant (1982), customer satisfaction is referred to as “an outcome of purchase and use resulting from the buyer's comparison of the reward and the cost of the purchase in relation to the anticipated consequences” (p.493). However, Rust and Oliver (1994) viewed customer satisfaction as “a summary cognitive and affective reaction to a service incident that results from the comparison of customers’ perceptions of service quality with their expectations of service performance” (p.2).

The marketing literature conceptualises customer satisfaction from two major perspectives: a ‘transaction-specific’ perspective; and a ‘cumulative’ perspective (Boulding et al., 1993). The transaction-specific perspective specifies that customer satisfaction is a post-choice evaluative judgment of a single purchase occasion (Oliver, 2010). From the cumulative perspective, customer satisfaction is not based on a single consumption or purchase experience but on the accumulated positive experiences with a good or service (Fornell, 1992; Rust & Oliver, 1994). Several researchers have noted that cumulative satisfaction is superior to transaction-specific satisfaction in explaining an organisation’s past, current, and future performance (Hapsari et al., 2017; Johnson & Fornell, 1991; Yun et al., 2020). Therefore, in the present research, spectator satisfaction is conceptualised as spectators’ overall satisfaction with their game-attendance experiences (Biscaia et al., 2013; Calabuig Moreno et al., 2014; Theodorakis et al., 2013; Yun et al., 2020).

Apart from the various definitions of customer satisfaction, the interrelationships between customer satisfaction and other marketing constructs have also been widely explored in the marketing literature.

2.5.1 The Relationship between Customer Satisfaction and Customer Loyalty

Customer satisfaction has been considered a robust antecedent of customer loyalty in various industries. For example, de Ona (2021) explores the interrelationships among service quality, customer satisfaction, and customer loyalty in the European public transport industry. Their research findings indicate that customer satisfaction has a positive direct effect on customers’ behavioural intentions. Similarly, the research findings from Ing et al.’s (2020) study on the Malaysian restaurant industry also indicate a positive path from customer satisfaction to customer loyalty. Based on survey data collected from 378 students at Lebanese private universities, Khawaja et al. (2021) empirically analyse the impacts of customer satisfaction and corporate social responsibility on customer loyalty. The authors find that customer satisfaction may lead to customers’ loyalty towards the university brand.

The customer satisfaction-customer loyalty link is also found in the sports industry. In the context of New Zealand professional rugby union, Clemes et al. (2011) note that spectator satisfaction positively influences spectators' intentions to attend a future match and make recommendations. In the Japanese professional soccer league, Yoshida et al. (2015) also find that spectators' satisfaction with the game and the provided service positively influences their intentions to attend future games and spend more on their sports consumption. Based on survey data collected from 350 spectators of the European professional football leagues, Theodorakis et al. (2013) find that satisfaction significantly influences spectators' intentions to attend live games in the future. A positive effect of spectator satisfaction on behavioural intention was also found in Koo et al.'s (2008) study on women's college basketball in the United States. In a recent study on Australian professional soccer, Yun et al. (2020) find that spectator satisfaction is a major antecedent of spectators' attitudinal and behavioural loyalty. The research findings of Rohman's (2019) study on the professional football league in Iran also support the positive path from spectator satisfaction to spectator loyalty.

2.5.2 The Relationship between Customer Satisfaction and Customer Engagement

Some researchers have examined the effect of customer satisfaction on customer engagement in various contexts (e.g., Abror et al., 2019; Carlson et al., 2019; Hapsari et al., 2017; Vo et al., 2020; Zhu et al., 2016). In online brand communities, Zhu et al. (2016) find that satisfied customers tend to engage actively with a firm by providing constructive feedback, helping other customers, and recommending the firm to other people. The empirical evidence from VO et al.'s (2020) research on the luxury hotel industry in Vietnam also indicates a positive direct path from customer satisfaction to customer engagement. Similarly, in the United States and China social media context, Carlson et al. (2019) note that customer satisfaction may result in consumers' transactional and non-transactional engagement behaviours. The engagement behaviours include 'purchase behaviour intentions', 'feedback behaviour intentions', and 'influencer behaviour intentions' (Carlson et al., 2019). A positive relationship between customer satisfaction and customer engagement is also found in the airline industry (Hapsari et al., 2017) and the banking industry (Abror et al., 2019). However, in Australian professional soccer league, Yun et al. (2020) argue that fan engagement drives spectator satisfaction, rather than the reverse.

To date, the published literature examining the relationship between spectator satisfaction and team engagement in the professional sports setting is sparse.

2.6 Brand / Team Image

Brand image is considered an important marketing concept since it was first introduced into the marketing discipline by Gardner and Levy (1955). Numerous researchers note that a strong brand image may assist organisations in developing a unique brand position and enhancing the market performance of the brand (Biscaia et al., 2016; Chen et al., 2017; Keller, 1993; Mullin et al., 2014; Park et al., 2019).

The marketing literature defines brand image in several different ways. According to Keller (1993), brand image is “perceptions about a brand as reflected by the brand associations held in consumer memory” (p.3). Grönroos (1984) defined brand image as a filter influencing the way that customers perceive a brand or a company. Kennedy (1977) suggested that brand image contained ‘functional branding’ and ‘emotional branding’. The functional brand image refers to the tangible items that are measurable, while the emotional aspect of brand image represents consumers’ psychological feelings and perceptions towards the brand.

Davies et al. (2004) suggested that anything could become a brand, such as a sports team, a company, or a person’s name. Team image is an extension of brand image in the sporting context (Bauer et al., 2008; Chen et al., 2017; Rohman, 2019; Yun et al., 2020), and the differences between the two concepts are minimal (Chen et al., 2017). Team image refers to the cumulative product of team brand associations in the sports consumer’s mind (Bauer et al., 2008; Keller, 1993; Rohman, 2019; Yun et al., 2020).

2.6.1 The relationship between Brand Image and Customer Loyalty

Brand image has been considered a robust driver for customer loyalty in various service industries (Chang, 2020; Channoi et al., 2018; Rohman, 2019; Yun et al., 2020). In the context of Thailand beach resorts, Channoi et al. (2018) find that brand image positively predicts customer loyalty. If customers form a positive image of a beach resort, they are likely to return to the resort or recommend the resort to others. The empirical evidence from Chang’s (2020) research on Starbucks in Taiwan also supports the positive path from brand image to customer loyalty. Similarly, Espinosa et al. (2018) note that brand image exerts a significant positive effect on customer loyalty in the restaurant industry in the United States.

The effect of brand image on customer loyalty has also been examined in the sports industry. For example, Bauer et al. (2008) conducted a study on fan loyalty and its antecedents in the context of the German professional soccer league. The authors noted that fan loyalty was positively influenced by the image of the soccer team. The findings of Chen et al.’s (2017) research on the Chinese professional baseball league also indicate that a positive team image significantly increases

spectators' revisit intentions. Based on survey data collected from 250 Indonesian football spectators, Rohman (2019) note that the image of the soccer team significantly influences the loyalty behaviours of spectators. Similarly, in the Australian men's professional soccer, Yun et al. (2020) find that there is a significant and positive causal relationship between team image and spectators' attitudinal and behavioural loyalty.

However, Hart and Rosenberger (2004) examined the relationship between brand image and customer loyalty in three industries - department store, newspaper, and insurance. The authors found no significant positive impact of brand image on customer loyalty in any of these industries. Likewise, Hapsari et al. (2017) find that brand image has no significant direct effect on customer loyalty in the Indonesian airline context.

Further research on the brand image-customer loyalty link is required due to the mixed findings on the relationship between the two constructs.

2.6.2 The Relationship between Brand Image and Customer Engagement

Van Doorn et al. (2010) have proposed a conceptual relationship between brand image and customer engagement. The authors suggest that the antecedents of customer engagement can be grouped into three categories: 'customer-based factors'; 'firm-based factors', and 'context-based factors'. Brand image is considered a firm-based factor that contributes to customer engagement (Van Doorn et al., 2010).

The conceptual relationship between brand image and customer engagement has been empirically examined by several researchers. For example, based on survey data collected from 403 students in India, Islam and Rahman (2016) find that brand image positively predicts customer engagement in the Indian fashion apparel industry. Hussein (2018) also note that the restaurant image has a significant and positive impact on customer engagement in the Indonesian casual dining restaurant context. The authors find that the more positive the restaurant image, the more likely customers are to engage with the restaurant. Similarly, the findings of Davies et al.'s (2018) research on the European recruitment industry also reveal a positive relationship between employer image and employee engagement.

However, in the Indonesian airline industry, Hapsari et al. (2017) find no significant correlation between brand image and customer engagement. Likewise, Zanon et al. (2019) have examined the relationship between the family firm image and customers' engagement activities on social media platforms. The researchers find no significant direct effect of the family firm image on customer engagement. However, in the Australian professional soccer setting, Yun et al. (2020) argue that fan engagement is a driver of team image, rather than the reverse.

To date, only limited published research has investigated the relationship between team image and team engagement in spectator sports.

2.6.3 The Relationship between Brand Image and Customer Satisfaction

The marketing literature suggests two opposing views on the relationship between brand image and customer satisfaction. One view suggests that customer satisfaction leads to brand image (Hapsari et al., 2017; Kim et al., 2016; Sultan & Wong, 2019). In a study on Australian university students' behavioural intentions, Sultan and Wong (2019) note that student satisfaction positively influences the perceived image of the university. Similarly, in Hapsari et al.'s (2017) study on the Indonesian airline industry, the authors find that satisfied passengers tend to form a positive image toward the airline company. Nonetheless, the positive path from brand image to customer satisfaction has only been found in limited sports marketing literature. For example, the findings of Kim et al.'s (2016) research on the Formula One Chinese Grand Prix also reveal that spectator satisfaction is a robust antecedent of the image of the sporting event destination.

However, numerous recent sports marketing researchers suggest an opposing view, noting that brand image is an antecedent of customer satisfaction, rather than the reverse (Elahi et al., 2020; Espinosa et al., 2018; Jeong & Kim, 2020; Koo et al., 2014; Yun et al., 2020). For example, studying Australian men's professional soccer, Yun et al. (2020) find that team image positively influences spectator satisfaction. Similarly, in the French professional soccer setting, Beccarini and Ferrand (2006) found that club image positively influenced season ticket holders' satisfaction. In the international marathon event context, Koo et al. (2014) note that the event image has a significant and positive causal effect on spectator satisfaction. Their research findings reveal that a positive event image may turn into spectator satisfaction that can lead to spectators' revisit intention. The positive effect of brand image on customer satisfaction has also been found in the sports tourism industry (Elahi et al., 2020; Jeong & Kim, 2020).

2.7 Customer/Team Engagement

Customer engagement is a relatively new marketing construct but has received considerable attention (Brodie et al., 2011; Hollebeek et al., 2014; Kumar et al., 2019; Van Doorn et al., 2010; Verhoef et al., 2010). Several researchers suggest that customer engagement is beneficial for a firm's performance by enhancing the customer-firm relationship and increasing profitability (Hapsari et al., 2017; Hollebeek et al., 2014; Kumar et al., 2019). Thakur (2016) notes that customer engagement is a critical relationship marketing construct that provides "enhanced predictive and explanatory power of focal consumer behaviour outcomes, including loyalty towards the focal object" (p.154). Recent empirical findings also suggest that the contributions of customer

engagement may extend beyond purchase-related behaviours to non-purchase-related interactive behaviours, such as brand referral and collaborative product development processes (Kumar et al., 2019; Yoshida et al., 2014). In the sporting context, Yoshida et al. (2014) note that highly engaged fans focus not only on 'self-interested' tasks, such as watching and attending games, but also on tasks that benefit their favourite sports teams, such as spreading positive word-of-mouth, displaying sports fandom, and attending events collaboratively.

Despite the wide acknowledgement of the importance of customer engagement, scholars hold different views on how it should be conceptualised and measured (Hollebeek et al., 2014; Yoshida et al., 2014). Sprott et al. (2009) proposed that customer engagement was a cognitive process in which consumers tended to link their favourite brand to their self-concept. The authors developed an 8-item scale to measure customer engagement. The scale consisted of four dimensions: 'self-brand connection'; 'brand identity'; 'person-brand fit'; and 'self-definition'.

Another popular customer engagement conceptualisation method is based on behaviour. According to Van Doorn et al. (2010), customer engagement is "customers' behavioural manifestations that have a brand or firm focus, beyond purchase, resulting from motivational drivers" (p.254). The authors suggest that customer engagement contains five dimensions: 'valence'; 'form or modality'; 'scope'; 'nature of impact'; and 'customer goals'.

In a more comprehensive manner, several researchers view customer engagement as a multiple-dimensional construct consisting of cognitive, emotional and behavioural aspects (Brodie et al., 2011; Hollebeek, 2011). Hollebeek et al. (2014) developed and validated a three-dimensional scale ('cognitive procession', 'affection', and 'activation') for measuring customer engagement in the social media context. So et al. (2016) introduced a five-dimension scale to measure customer engagement in the tourism industry. The five dimensions were: 'identification'; 'enthusiasm'; 'attention'; 'absorption'; and 'interaction'.

In the present research, team engagement is defined as the emotional, psychological and behavioural connections between a fan and his or her favourite sports team (Pradhan et al., 2019; Yoshida et al., 2014; Yun et al., 2020). According to Yoshida et al. (2014), fan engagement behaviour consists of two aspects: 'in-role' engagement; and 'extra-role' engagement. In-role engagement refers to behaviours shaped by fans' self-interest. These behaviours include attending sports games, media consumption, and merchandising. Extra-role engagement refers to behaviours directed toward the sports team and other fans, including interacting with other fans and collaborative event attendance.

There are diverse views on how to define and measure customer engagement. Hollebeek et al. (2014) note that the measurement of customer engagement may vary considerably across engagement objects and contexts. Fernandes and Esteves (2016) also suggest that the level of customer engagement and the type of engagement behaviour may differ because of contextual factors, such as industry and product or service attributes. Therefore, further study on the customer engagement construct is required (Brodie et al., 2011; Fernandes & Esteves, 2016; Parihar et al., 2019). To date, there is no published literature examining team engagement or its interrelationship with other marketing constructs in the NBA.

2.7.1 The Relationship between Customer Engagement and Customer Loyalty

There is a growing body of literature studying the relationship between customer engagement and customer loyalty in various service industries. For example, Abror et al. (2019) investigate the impact of customer engagement on customer loyalty in the Indonesian banking industry. Their research findings suggest that customer engagement is positively related to loyalty manifestations such as repeat purchases and paying a price premium. In the short-term insurance industry in South Africa, Petzer and van Tonder (2019) find that customer engagement has a significant and positive direct impact on customer loyalty. In addition to the direct impact, customer engagement also fully mediates the effect of customer satisfaction on customer loyalty (Petzer & van Tonder, 2019). Similarly, based on survey data from 958 social media platform users, Carlson et al. (2019) note that customer engagement is a primary driver of customer loyalty. The positive customer engagement-customer loyalty link has also been found in several other service industries, such as airline (Hapsari et al., 2017), tourism (So et al., 2016), and online shopping (Thakur, 2016).

The effect of customer engagement on customer loyalty has also been examined in the sporting context. In the Japanese professional football league Division II, Yoshida et al. (2014) find that fans' engagement behaviour significantly affects their intention of attending future games and spreading positive word-of-mouth. Based on survey data collected from 390 fans of Japanese professional football and baseball leagues, Yoshida et al. (2018) note that fans' social media engagement with a sports team positively influences their behavioural brand loyalty. In the Indian professional football setting, Pradhan et al. (2019) note that fans' engagement with a sponsored soccer team may significantly contribute to their purchase intentions from the sponsor brand.

2.8 Negative Team Behaviour

In the present research, negative team behaviour is defined as the on- and off-court behaviour of a sports team's players, coaches or other key staff which violates the legal or moral rules guiding relationship behaviour (Abeza et al., 2020; Alvarado-Vargas & Zou, 2019; Westberg et al., 2020).

Some examples of negative team behaviour include sexual assault, illegal betting, doping, driving under the influence of drugs or alcohol, racist and other discriminatory comments, and on-field violence.

In recent years, major professional sports leagues have experienced negative team behaviour on an ongoing basis (Abeza et al., 2020; Westberg et al., 2020). For example, Kobe Bryant, the former NBA star player, was accused of sexual assault in 2003 (Wise & Markels, 2003). The incident significantly harmed Kobe Bryant's public image and caused several of his fans to abandon him (Meng & Pan, 2013). In 2004, a brawl happened in an NBA game between the Indiana Pacers and the Detroit Pistons (CBS News, 2012). Players and spectators of both teams were involved in this brawl, causing a significant negative impact on the league (CBS News, 2012). Another example comes from the former owner of the Los Angeles Clippers, Donald Sterling, who made racist comments against African Americans in 2014 (Martin, 2014). Those racist comments resulted in numerous NBA fans boycotting the team (Martin, 2014). In the Chinese Professional Baseball League (CPBL), some teams were involved in match-fixing scandals in 2005, which caused the overall game attendance to drop by approximately 50% (Wu et al., 2012).

Negative team behaviour may have a huge impact on the individual, the team, the league, sponsors, and other stakeholders (Abeza et al., 2020; Alvarado-Vargas & Zou, 2019; Harker, 2021; Lee & Babiak, 2019; Lee & Kwak, 2017; Meng & Pan, 2013; Westberg et al., 2020). Bloxsome et al. (2020) suggest that a sports player's negative off-field behaviour may damage the team's reputation, cause a decline in fan support, and result in substantial financial losses. The impact has become even more significant in recent times because the negative behaviour is often intensively reported in the media (Abeza et al., 2020; Westberg et al., 2020). Fans also have an increasing ability to circulate information on various social media platforms (MacPherson & Kerr, 2021; Meng & Pan, 2013).

Some researchers have studied negative team behaviour in the sports industry. However, most published studies focus on developing effective responses to negative behaviour from the public relations perspective (e.g., Abeza et al., 2020; Lee & Kwak, 2017; Meng & Pan, 2013). To date, limited published literature has examined negative team behaviour and its impact on other important constructs from a marketing perspective. The following subsection discusses the interrelationships among negative team behaviour, team image, and team engagement.

2.8.1 The Interrelationships among Negative Team Behaviour, Team Image, and Team Engagement

Smith and Stewart (2010) suggest that professional sports players, coaches, and other key staff often live under public scrutiny. Team members' on- and off-court behaviour often attracts lots of attention from sports fans (Abeza et al., 2020; Meng & Pan, 2013; Smith & Stewart, 2010). Instead of just observing the athletic feats of the team, sports fans also expect team members to serve as role models, representing their team, their city, and their fans (Meng & Pan, 2013). Thus, fans often have high expectations of the team members in terms of their behaviour and conduct (Abeza et al., 2020; Meng & Pan, 2013; Westberg et al., 2020). Negative team behaviour, conflicting with fans' expectations, may significantly affect fans' perceptions of the team (Bloxsome et al., 2020; Chen et al., 2017). Ahluwalia et al. (2001) noted that "people place more weight on negative than positive information in forming overall evaluations of a target" (p.204). As a result, negative team behaviour may harm fans' perceived image of the team (Bloxsome et al., 2020; Chen et al., 2017; Pullig et al., 2006).

To date, no published literature has empirically examined the effect of negative team behaviour on team engagement in the professional sports industry. Alvarado-Vargas and Zou (2019) note that negative team behaviour may cause fans to withdraw their support and even switch to another team's fan base. Analysing 7700 sports fans' comments on Facebook, Twitter and Instagram, MacPherson and Kerr (2021) also note a plethora of fans tend to withdraw their support and fanship due to professional sports players' norm violations. Therefore, it is reasonable to posit that negative team behaviour may have a negative effect on team engagement.

To date, there is no published research investigating the interrelationships among negative team behaviour, team image, and team engagement in the NBA.

2.9 Player Loyalty

Several scholars note that sports consumers will form an attachment to different sports objects, such as a player, coach, team, community, and the league (Ballouli et al., 2016; Chung et al., 2019; Funk & James, 2001; Wu et al., 2012). In the sports marketing literature, interest in a particular player has been identified as a factor that motivates fans to attend a game (Gencer et al., 2011; Kim et al., 2020; Neale & Funk, 2006; Zhang et al., 1995). Players, particularly when they perform at the very highest level, are often considered the heart of the professional sports industry and have a significant impact on fans' sports consumption (Ballouli et al., 2016; Smith & Stewart, 2010; Wu et al., 2012). Examples include Tiger Woods in professional golf, Lionel Messi in professional soccer, and LeBron James in professional basketball (Buchanan, 2018; Manfred & Rogers, 2015).

Chung et al. (2019) note that a strong or long-term attachment to a player may even cause fans to curtail their attachment to a team if their favourite player leaves the team. This phenomenon was evidenced in David Beckham's transfer in 2003 when five million soccer fans switched their loyalty from Manchester United to Real Madrid (Kerr & Gladden, 2008). Similarly, thousands of NBA fans switched their loyalty from Cleveland Cavaliers to Miami Heat because of LeBron James's transfer (M. Lewis, 2019; Woike, 2018).

Funk and James (2001) introduced the Psychological Continuum Model (PCM) to illustrate the psychological relationship an individual may form with a sports object (e.g., a player). The model suggests that the psychological relationship consists of four vertical stages: 'awareness'; 'attraction'; 'attachment'; and 'allegiance'. Awareness occurs when an individual first learns about the sport object (e.g., a player) but does not have a specific favourite. In the attraction stage, an individual acknowledges having a favourite player based on various motives. Attachment indicates that a psychological connection from the individual towards the player begins to form. Allegiance means that the individual has become loyal to the player.

Extending from the broader concept of customer loyalty, in the present research, player loyalty is defined as fans' loyalty towards a specific sports player (Oliver, 1999; Wu et al., 2012). The present research intends to conceptualise player loyalty and explore its relationships with other marketing constructs in the NBA. Examining player loyalty and its impacts is particularly important in the NBA because the current transaction system allows players to switch teams upon request, with more leverage than ever before (Raphael, 2019). To date, no published literature has examined player loyalty or its relationship with other marketing constructs in the NBA. The following subsection discusses the interrelationships among player loyalty, team engagement, and team loyalty.

2.9.1 The Interrelationships among Player Loyalty, Team Engagement, and Team Loyalty

As stated in Section 2.9, Funk and James (2001) illustrated the four stages of how a sports consumer may form a psychological relationship towards a player. The authors noted that engagement activities, such as meeting with players and attending team community events, could enhance a fan's attachment to the player and foster a movement from attachment to loyalty. The Psychological Continuum Model of Funk and James (2001) indicates a potential positive relationship between team engagement and player loyalty. Although the theoretical relationship between team engagement and player loyalty has not yet been examined empirically, numerous research findings support the positive path from engagement to loyalty (Carlson et al., 2019; Hapsari et al., 2017; Pradhan et al., 2019; So et al., 2016; Yoshida et al., 2014) (See Section 2.7.2).

Therefore, it is reasonable to posit that team engagement has a significant positive effect on player loyalty.

To date, there is no published literature investigating the relationship between player loyalty and team loyalty in the professional sports setting. However, the effect of interest in a particular player on fans' behavioural intentions is documented (Kim et al., 2020; Neale & Funk, 2006; Watanabe & Zhang, 2019). For example, in the context of the Australian Rules football, Neale and Funk (2006) found that fans' interest in players was a factor that predicted game-day attendance. Similarly, the findings of Watanabe and Zhang (2019) research on Japanese professional golf tournaments also reveal that player affection positively predicts the spectators' desire to stay at the sports event. Kim et al. (2020) also find that spectators' interest in a particular player significantly influences their motivation to attend the Australian Rules football games. Based on data collected from 562 football spectators in Poland, Kucharska et al. (2020) note that fans' identification with top celebrity football players contributes to attitudinal and behavioural loyalty. Likewise, in Wu et al. (2012) study on professional baseball in Taiwan, the authors find that sports fans' player identification positively influences their team identification which, in turn, has a positive effect on fans' re-patronage intention. However, in the studies previously referenced, player loyalty was not conceptualised, nor were its relationships with other marketing constructs examined.

2.10 The Mediating Effects among Related Constructs

Findings of prior studies show that marketing constructs may exert both direct and indirect effects on customer loyalty (Carlson et al., 2019; Duan & Liu, 2021; Hapsari et al., 2017; Islam & Rahman, 2016; Jeong & Kim, 2020; Petzer & van Tonder, 2019). The following subsections discuss the potential mediating effects among the constructs.

2.10.1 The Mediating Effects of Customer Satisfaction, Brand Image and Customer Engagement on the Relationship between Service Quality and Customer Loyalty

As discussed in Section 2.4.8, numerous research findings have shown that service quality has a significant direct effect on customer loyalty (Alexandris et al., 2017; Avourdiadou & Theodorakis, 2014; Lee & Kwak, 2017; Prastiwi et al., 2021). However, several researchers note that the effect of service quality on customer loyalty may be mediated by other constructs, such as customer satisfaction (Biscaia et al., 2013; Koo et al., 2008; Rohman, 2019; Theodorakis et al., 2013; Yildiz & Duyan, 2019), brand image (Akroush et al., 2016; Makanyeza & Chikazhe, 2017; Rohman, 2019), and customer engagement (Carlson et al., 2019; Chetthamrongchai et al., 2019; Snijders et al., 2019).

The mediating role of customer satisfaction on the positive relationship between service quality and customer loyalty has been examined in several sports marketing studies. In women's college basketball in the United States, Koo et al. (2008) found that perceived service quality only affected spectators' behavioural intentions indirectly through spectator satisfaction. The findings from Theodorakis et al.'s (2013) research on the Greek professional soccer league reveal that spectator satisfaction plays a partial mediating role on the relationship between service quality and spectators' behavioural intentions. Similarly, in the context of the professional soccer league in Portugal, Biscaia et al. (2013) find that spectator satisfaction partially mediates the effect of service quality on spectators' behavioural intentions. The findings from Rohman's research (2019) on the Indonesian professional soccer league also indicate that spectator satisfaction plays a full mediating role on the positive relationship between service quality and spectator loyalty. In the sports and physical activity sector in Turkey, Yildiz and Duyan (2019) also note that the effect of service quality on customer loyalty is partially mediated by customer satisfaction.

Furthermore, brand image has also been found to mediate the positive effect of service quality on customer loyalty in various service industries. For example, in the Indonesian professional soccer league, Rohman (2019) notes that team image plays a full mediating role in the positive relationship between service quality and spectator loyalty. Similarly, in the tourism industry in Jordan, Akroush et al. (2016) find that the positive effect of service quality on customer loyalty is fully mediated by brand image. In the banking industry in Zimbabwe, Makanyeza and Chikazhe (2017) also note that the effect of service quality on customer loyalty is partially mediated by brand image. To date, only limited published research has investigated the mediating effect of team image on the relationship between service quality and team loyalty in the professional sports setting.

Several researchers note that customer engagement also acts as a mediating variable in the relationship between service quality and customer loyalty in various service industries. In the setting of social media platforms in the United States and China, Carlson et al. (2019) find that customer engagement partially mediates the effect of service quality on customer loyalty. Likewise, in Chetthamrongchai et al.'s (2019) study on the pharmacy industry in Thailand, the positive causal effect of service quality on customer loyalty is partially mediated by customer engagement. In the education industry in The Netherlands, Snijders et al. (2019) also suggest that student engagement plays a partial mediating role on the relationship between service quality and student loyalty. To date, published research that examines the mediating role of team engagement in the context of the professional sports industry is sparse.

2.10.2 The Mediating Effect of Customer Engagement on the Relationship between Customer Satisfaction and Customer Loyalty

The direct effect of customer satisfaction on customer loyalty was explained in Section 2.5.1. Several researchers note that customer satisfaction may also affect customer loyalty indirectly through other constructs (Islam & Rahman, 2016; Petzer & van Tonder, 2019). In the context of the Indonesian airline industry, Hapsari et al. (2017) find that customer engagement partially mediates the effect of customer satisfaction on customer loyalty. Likewise, in Petzer and van Tonder's (2019) study on the South African short-term insurance industry, customer engagement plays a partial mediating role on the relationship between customer satisfaction and customer loyalty. In the Indian online brand community, Islam and Rahman (2016) also note a partial mediating effect of customer engagement on the relationship between customer satisfaction and customer loyalty. To date, little is known about the mediating role of team engagement on the relationship between spectator satisfaction and team loyalty in the professional sports industry.

2.10.3 The Mediating Effects of Customer Engagement and Customer Satisfaction on the Relationship between Brand Image and Customer Loyalty

The positive relationship between brand image and customer loyalty was discussed in Section 2.6.1. Some researchers note that customer engagement and customer satisfaction may mediate the positive effect of brand image on customer loyalty (Duan & Liu, 2021; Hapsari et al., 2017; Huwae et al., 2020; Jeong & Kim, 2020; Lai et al., 2009). In the context of Indonesian airlines, Hapsari et al. (2017) note that customer engagement has a full mediating effect on the relationship between brand image and customer loyalty. Furthermore, based on survey data from 440 spectators of the 2016 Judo Grand Prix in Jeju, Jeong and Kim (2020) find that spectator satisfaction partially mediates the effect of event destination image on customer loyalty. Studying marathon events in China, Duan and Liu (2021) note that spectator satisfaction plays a partial mediating role between event image and spectators' behavioural intentions to reattend the event. Similarly, Huwae et al. (2020) find that tourist satisfaction partially mediates the influence of destination image towards tourist loyalty in beach tourism in Indonesia. Lai et al. (2009) also found that customer satisfaction acted as a full mediating variable between store image and customer loyalty in the Chinese telecommunications industry. To date, limited research has examined the mediating roles of spectator satisfaction and team engagement in the professional sports sector.

2.11 Gender and Age Theory

Kotler and Armstrong (2018) suggest that customers are composed of numerous subgroups of people, and each subgroup has distinct needs and wants that may result in disparities in people's

perceptions, interests, and behaviours across subgroups (Cambra-Fierro & Melero-Polo, 2017; Kotler & Armstrong, 2018). Therefore, assuming that all customers share a particular attitude or intention should be avoided (Herrando et al., 2019). Findings of prior studies show that consumers' demographic characteristic, such as age and gender, may affect their sports consumption behaviours (Jones & Byon, 2020; Keaton et al., 2015; McCabe, 2008; Park et al., 2016) and moderate the interrelationships among various constructs used in sports marketing studies (Kamath et al., 2021; Kim & Trail, 2011).

In the Indian professional soccer league, Kamath et al. (2021) examine the moderating effects of age and gender on the interrelationships among attachment points, team identification, attitudes to sponsors, and behavioural intentions. The authors find that female spectators' team identification is formed because of sports attachment, while male spectators' team identification is formed based on player attachment. The authors also note that formed spectators aged under 21 years are more likely to spread positive word-of-mouth than older spectators.

Surveying 386 MLB spectators in the United States, Park et al. (2016) find that spectators in different age groups tend to have different game-attendance motivations. The authors also note that age differences significantly influence spectators' behavioural intentions.

In professional football in Denmark, Mintert and Pfister (2014) note that female fans play a critical role in the fan movement and show significant commitment and loyalty when the football club's performance faltered.

Based on survey data from 323 spectators of five different professional netball teams in New Zealand, Heere and Newland (2013) note that the sports game consumptions were different between males and females. The researchers find that female spectators tend to have lower levels of identification with sports but show a greater inclination toward future loyalty to the team.

Studying the Women's National Basketball Association (WNBA) in the United States, McCabe (2008) noted that gender exerted a significant impact on spectators' affection towards the WNBA. female spectators had different motivations from male spectators for attending games.

Gender and age differences have also been examined in other service industries. For example, In the context of the Spanish mobile telecommunications sector, Cambra-Fierro and Melero-Polo (2017) note that age and gender moderate the interrelationships among customer satisfaction, customer engagement and customer loyalty. The authors find that customer satisfaction has a greater impact on customer loyalty and customer engagement among younger consumers (aged 25 or under) than among older customers (aged over 25). Furthermore, in Cambra-Fierro and Melero-

Polo's (2017) study, customer satisfaction exerted a stronger effect on customer loyalty among women than among men.

A moderating effect of age and gender is also found in Davies et al.'s (2018) study of the recruitment industry in the United Kingdom. The authors note that the interrelationships among employer image, employee satisfaction and employee loyalty vary across age and gender groups. Their research findings indicate that the employer image-employer engagement path is significant for older respondents (aged above 35), but not for younger respondents (aged 35 and under). The authors also note that the effect of employee satisfaction on employee engagement is more significant among males compared to females.

In the online brand communities in the United States and China, Carlson et al. (2021) have investigated the interrelationships among service quality, customer engagement and customer loyalty. Their research findings indicate that there is a significant difference in the relationship between service quality and customer engagement across different age groups in online brand communities.

In the Malaysian tourism industry, Rasoolimanesh et al. (2021) note that male and female tourists tend to have different reasons for engaging with a tourism destination. The relationship between engagement and loyalty also varied across genders in their study.

To date, no published literature has empirically examined the age or gender differences in the path models in the NBA.

Chapter 3

Conceptual Research Model and Hypothesis Development

3.1 Model Development

As described in Section 2.3, there are numerous studies exploring customer loyalty in various service industries. Although a diversity of antecedents of customer loyalty has been identified in various service industries, several scholars note that factors that foster customer loyalty may vary within and across industries (Cambra-Fierro & Melero-Polo, 2017; Funk et al., 2016; Kotler & Armstrong, 2018; Watanabe et al., 2013). Moreover, the interrelationships among the antecedents of customer loyalty also need to be tested in different contexts (Arnerić et al., 2016; Tian et al., 2015).

A conceptual research model (Figure 3.1) was developed based on the results of the empirical analysis of previous studies of customer loyalty in various service industries. The model contains seven higher-order marketing constructs: team loyalty; spectator satisfaction; service quality; team image; team engagement; negative team behaviour; and player loyalty. The model was developed as a framework to empirically analyse the interrelationships among these seven constructs in the NBA setting. A comprehensive analysis may foster a deeper understanding of the interrelationships among these constructs and determine their relative impact on fan loyalty (Bauer et al., 2008; Rohman, 2019; Tsotsou, 2013; Yun et al., 2020). To date, there is no published literature examining the interrelationships among these seven constructs in the NBA.

The model posits that service quality is an antecedent of team image, team engagement, team loyalty and spectator satisfaction. Team image is proposed to positively affect team engagement, team loyalty and spectator satisfaction. Negative team behaviour is proposed to have a negative impact on team image and team engagement. Team engagement is expected to influence player loyalty and team loyalty positively. Player loyalty is proposed to be an antecedent of team loyalty. Spectator satisfaction is proposed to have a positive effect on team engagement and team loyalty.

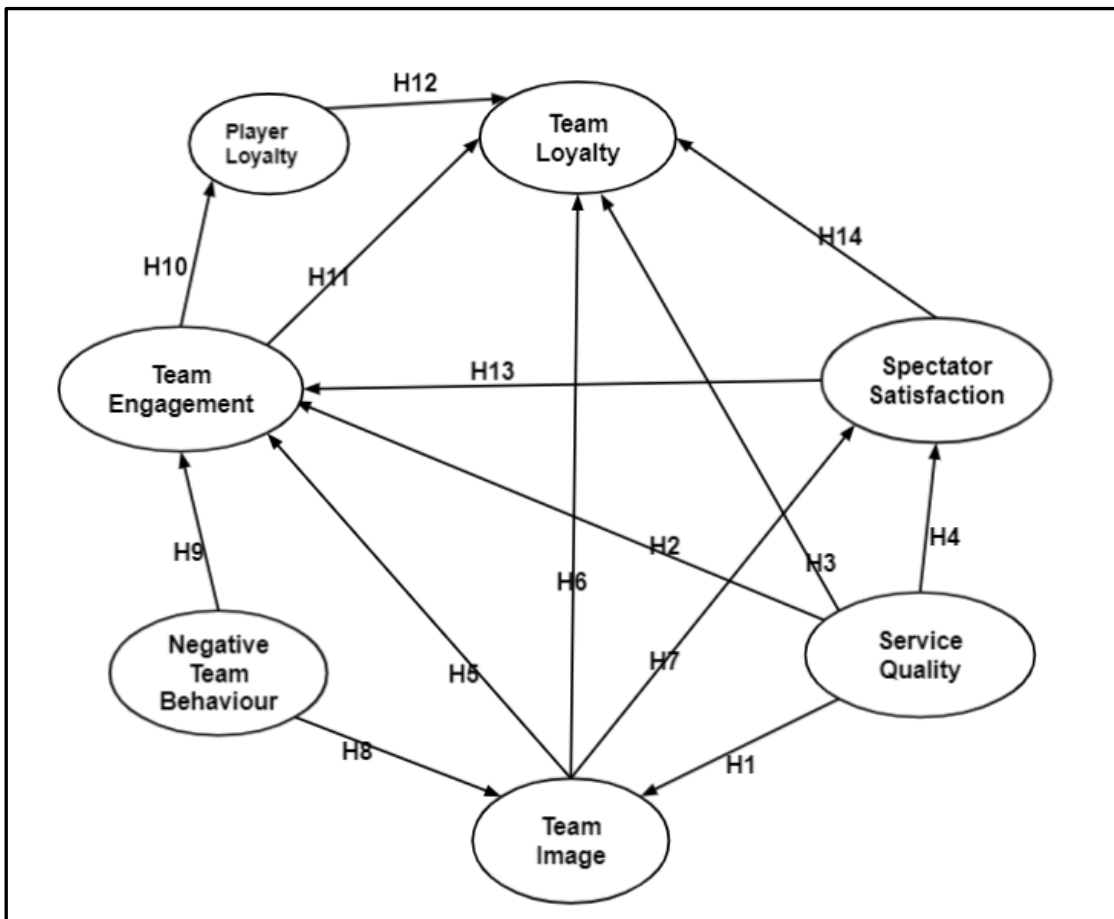


Figure 3.1 Conceptual Research Model

3.2 Hypothesis Development

Twenty-two hypotheses have been proposed based on a review of the literature as discussed in Chapter 2.

3.2.1 Hypotheses Relating to Research Objectives One and Two: Examining the Interrelationships among Team Loyalty and Its Antecedents in the NBA

3.2.1.1 Service Quality

Numerous researchers have examined service quality and its impact on other marketing constructs in various service industries (e.g., Channoi et al.; Son et al., 2018; Theodorakis et al., 2013; Yamaguchi et al., 2015; Yildiz & Duyan, 2019). As discussed in Sections 2.4.6-2.4.9, the research findings from several empirical studies reveal that service quality is a determinant of sports team image (Rohman, 2019) and sports event destination image (Jeong & Kim, 2020; Moon et al., 2013; Yamaguchi et al., 2015), spectator loyalty (Alexandris et al., 2017; Benesbordi & Esmaili, 2019; Biscaia et al., 2013; Byon et al., 2013), and spectator satisfaction (Calabuig Moreno et al., 2014; Koo et al., 2008; Rohman, 2019; Son et al., 2018; Theodorakis et al., 2013). To date, published research examining the relationship between service quality and team engagement in the sporting context is sparse. However, the positive service quality-customer engagement link has been found in various

marketing studies (e.g., Abror et al., 2019; Islam et al., 2019; Jones et al., 2019; Roy et al., 2018; Vo et al., 2020). Therefore, the following hypotheses are proposed:

H1: Service quality has a significant positive effect on team image;

H2: Service quality has a significant positive effect on team engagement;

H3: Service quality has a significant positive effect on team loyalty;

H4: Service quality has a significant positive effect on spectator satisfaction.

3.2.1.2 Team Image

Several researchers suggest that team image positively influences spectator/fan loyalty (Bauer et al., 2008; Chen et al., 2017; Rohman, 2019; Yun et al., 2020) and spectator satisfaction (Beccarini & Ferrand, 2006; Yun et al., 2020). To date, only limited research has investigated the effect of team image on team engagement. However, the positive path from brand image to customer engagement has been supported by the findings of several studies (Davies et al., 2018; Hussein, 2018; Islam & Rahman, 2016; Van Doorn et al., 2010). As discussed in Section 2.6, team image is an extension of brand image in the sporting context, and the differences between the two are minimal (Bauer et al., 2008; Chen et al., 2017; Rohman, 2019; Yun et al., 2020). Therefore, the following hypotheses are proposed:

H5: Team image has a significant positive effect on team engagement;

H6: Team image has a significant positive effect on team loyalty;

H7: Team image has a significant positive effect on spectator satisfaction.

3.2.1.3 Negative Team Behaviour

In the sports industry, negative team behaviour may have a huge impact on the person involved, the team, the league, sponsors, and other stakeholders (Abeza et al., 2020; Alvarado-Vargas & Zou, 2019; Lee & Kwak, 2017; Meng & Pan, 2013; Westberg et al., 2020). As discussed in Section 2.8.1, some researchers note that negative team behaviour may negatively influence team image (Bloxsome et al., 2020; Chen et al., 2017; Pullig et al., 2006). Negative team behaviour may also cause fans to withdraw their support and fanship (Alvarado-Vargas & Zou, 2019; MacPherson & Kerr, 2021). Although to date, no published research has investigated the interrelationship among negative team behaviour, team image and team engagement in the NBA, the following hypotheses are proposed based on research findings in similar contexts:

H8: Negative team behaviour has a significant negative effect on team image;

H9: Negative team behaviour has a significant negative effect on team engagement.

3.2.1.4 Team Engagement

Research findings from several studies show that sports fans' engagement with a team may have a positive effect on their behavioural intentions (Pradhan et al., 2019; Yoshida et al., 2014; Yoshida et al., 2018). Furthermore, Funk and James (2001) suggested a theoretical positive relationship between team engagement and player loyalty. Although such a relationship has not yet been examined empirically, numerous research findings have supported a positive engagement-loyalty link (e.g., Carlson et al., 2021; Hapsari et al., 2017; Pradhan et al., 2019; So et al., 2016; Yoshida et al., 2014; Yoshida et al., 2018). Therefore, the following hypotheses are proposed:

H10: Team engagement has a significant positive effect on team loyalty;

H11: Team engagement has a significant positive effect on player loyalty.

3.2.1.5 Player Loyalty

To date, there is no published literature investigating the relationship between player loyalty and team loyalty in the NBA. However, as discussed in Section 2.9.1, the effect of interest in a particular sports player on fans' behavioural intentions is documented (e.g., Kim et al., 2020; Watanabe & Zhang, 2019; Wu et al., 2012). Several researchers found that fans' interest in players positively affects their game attendance and desire to stay for the duration of the game (Kim et al., 2020; Kucharska et al., 2020; Neale & Funk, 2006; Watanabe & Zhang, 2019; Wu et al., 2012). The present research is the first attempt to conceptualise player loyalty and explore its impact on team loyalty in the NBA. Therefore, the following hypothesis is proposed:

H12: Player loyalty has a significant positive effect on team loyalty.

3.2.1.6 Spectator Satisfaction

Several researchers have found that spectator satisfaction is a robust antecedent of spectator/fan loyalty in the professional sports industry (Biscaia et al., 2013; Koo et al., 2008; Rohman, 2019; Theodorakis et al., 2013; Yun et al., 2020). To date, only limited published literature has investigated the relationship between spectator satisfaction and team engagement in the professional sports setting. However, as discussed in Section 2.5.2, the positive path from customer satisfaction to customer engagement has been found in various service industries (Abror et al., 2019; Carlson et al., 2019; Vo et al., 2020; Zhu et al., 2016). Therefore, the following hypotheses are proposed:

H13: Spectator satisfaction has a significant positive effect on team engagement;

H14: Spectator satisfaction has a significant positive effect on team loyalty.

3.2.2 Hypotheses Relating to Research Objective Three: Examining the Mediating Effects among Related Constructs

Findings from prior studies have shown the significant direct effect of service quality on spectator/fan loyalty (Alexandris et al., 2017; Avourdiadou & Theodorakis, 2014; Benesbordi & Esmaeili, 2019; Byon et al., 2013; Lee & Kwak, 2017). However, several researchers note that the effect of service quality on spectator/fan loyalty may be mediated by other constructs, such as team image (Rohman, 2019) and spectator satisfaction (Biscaia et al., 2013; Koo et al., 2008; Rohman, 2019; Theodorakis et al., 2013; Yildiz & Duyan, 2019). To date, published research examining the mediating role of team engagement in the sporting context is sparse. However, as discussed in Section 2.10.1, customer engagement has been found to partially mediate the effect of service quality on customer loyalty in various service industries (Carlson et al., 2019; Chetthamrongchai et al., 2019; Snijders et al., 2019). Thus, the following hypotheses are proposed:

H15: Team image mediates the positive relationship between service quality and team loyalty;

H16: Spectator satisfaction mediates the positive relationship between service quality and team loyalty;

H17: Team engagement mediates the positive relationship between service quality and team loyalty.

The direct effect of spectator satisfaction on fan loyalty was explained in Section 2.5.1. To date, there is limited published research examining the indirect effect of spectator satisfaction on fan loyalty in the sporting context. However, as discussed in Section 2.10.2, several researchers find that customer satisfaction may affect customer loyalty indirectly through customer engagement (Hapsari et al., 2017; Islam & Rahman, 2016; Petzer & van Tonder, 2019). Thus, the following hypothesis is proposed:

H18: Team engagement mediates the positive relationship between spectator satisfaction and team loyalty.

Section 2.6.1 discussed the positive relationship between team image and fan loyalty. To date, published research investigating the indirect effect of team image on fan loyalty in the professional sports sector is sparse. However, as discussed in Section 2.10.3, research findings have shown that the effect of brand image on customer loyalty may be mediated by customer engagement (Hapsari

et al., 2017) and customer satisfaction (Duan & Liu, 2021; Huwae et al., 2020; Jeong & Kim, 2020; Lai et al., 2009). Therefore, the following hypotheses are proposed:

H19: Team engagement mediates the positive relationship between team image and team loyalty.

H20: Spectator satisfaction mediates the positive relationship between team image on team loyalty.

3.2.3 Hypotheses Relating to Research Objective 4: Examining whether NBA Spectators' Perceptions of Related Higher Order Marketing Constructs Vary across Age and Gender Groups

Kotler and Armstrong (2018) suggest that customers are composed of numerous subgroups of people, and each subgroup has distinct needs and wants that will result in disparities in consumers' perceptions and behaviours across subgroups (Cambra-Fierro & Melero-Polo, 2017; Kotler & Armstrong, 2018). Therefore, assuming that all customers share a particular attitude or intention should be avoided (Herrando et al., 2019).

As discussed in Section 2.11, findings from prior studies have shown that consumers' perceptions of related higher-order marketing constructs may vary by age (Cambra-Fierro & Melero-Polo, 2017; Davies et al., 2018; Kamath et al., 2021; Park et al., 2016) and gender (Heere & Newland, 2013; Kamath et al., 2021; McCabe, 2008; Mintert & Pfister, 2014; Rasoolimanesh et al., 2021). Thus, the following hypotheses are proposed:

H21: NBA spectators' perceptions vary across age groups;

H22: NBA spectators' perceptions of team loyalty vary between males and females.

Chapter 4

Research Methodology

4.1 Introduction

Chapter 4 discusses the research design and methodology used to test the conceptual research model and satisfy the four research objectives. The content of this chapter includes research design (Section 4.2), survey instrument development (Section 4.3), method of data collection (Section 4.4), data screening (Section 4.5) and data analysis techniques (Section 4.6).

4.2 Research Design

There are two commonly used methods in research – qualitative research, and quantitative research (Bryman & Bell, 2015; Zikmund, 2013). Qualitative research is “inductivist, constructivist and interpretivist” (Bryman & Bell, 2015, p. 392). It usually focuses on interpreting verbal narratives rather than quantification of data (Bryman & Bell, 2015). This research approach is often used to gather in-depth insights on topics that are not yet well understood (Quinlan et al., 2015).

Alternatively, quantitative research is described as “exhibiting a view of the relationship between theory and research as deductive, a predilection for a natural science approach, and an objectivist conception of social reality” (Bryman & Bell, 2015, p. 160). Quantitative approaches are used to find patterns, make predictions and test theories through numerical measurements and statistical analysis (Jemna, 2017; Malhotra, 2010; Quinlan et al., 2015; Zikmund, 2013). Researchers often use both qualitative and quantitative methods in marketing studies (Abeza et al., 2015; Harrison & Reilly, 2011; Jemna, 2017).

The present research aims to test theories on the interrelationships among seven higher-order marketing constructs, and therefore the quantitative method was the primary research method used in this study (Bryman & Bell, 2015; Quinlan et al., 2015). The suitability of using the quantitative approach has also been demonstrated in several recent studies in the professional sports sector (e.g., Machado et al., 2020; Park et al., 2019; Son et al., 2018; Yun et al., 2020).

A survey-based approach was used to collect primary data. Survey research features the use of self-report measures on selected samples (Quinlan et al., 2015). Survey research has been widely used in many academic disciplines, including political science, sociology, psychology and marketing, as surveys may provide a relatively quick, inexpensive, efficient and accurate means of assessing information about a population (Bryman & Bell, 2015; Hair et al., 2014).

4.3 Survey Instrument Development

The survey instrument, a close-ended questionnaire, was developed through three steps: construct operationalisation; pre-testing; and the final layout design (Hair et al., 2014; Zikmund, 2013).

4.3.1 Operationalisation of the Constructs

The conceptual research model in the present research contained seven constructs - team loyalty, service quality, spectator satisfaction, team image, team engagement, negative team behaviour and player loyalty. These constructs need to be operationalised so that they can be measured accurately (Bryman & Bell, 2015). The construct operationalisation process involved selecting measurement items for each construct through two approaches – a literature review and focus group discussions (Hair et al., 2014; Zikmund, 2013).

Literature Review

Hair et al. (2014) suggest that constructs can be operationalised by selecting the measurement items that performed well in prior research. Adopting well-performing measurement items from the existing literature helps improve the measurement quality of the questionnaire which will enable valid conclusions to be drawn from the modelling framework (Hair et al., 2014; Zikmund, 2013). The literature review of the seven constructs was discussed in Chapter 2.

Focus Group Discussions

Focus group discussions were also conducted to gain an in-depth knowledge of the research topic and develop the measurement items for each construct. Several scholars suggest that conducting focus groups in addition to a literature review may result in a better-designed and more informed survey instrument (Bryman, 2006; Garee & Schori, 1996; Gray, 2014; Hanson & Grimmer, 2007). A focus group refers to a discussion focused on a given topic, with a group of people sharing certain common features or characteristics (Wellington, 2000). Garee and Schori (1996) found that focus groups enabled researchers to gain invaluable information about “both the population whose opinion would be sampled and the research topic itself” (p. 41). Well-conducted focus groups may offer insights into complex matters such as customer thoughts, attitudes, motivations and behaviours (Hanson & Grimmer, 2007; Hesse-Biber & Leavy, 2011). Hair et al. (2014) note that focus groups are especially beneficial when developing measurement items for a construct without a rich history of previous research. In the present research, player loyalty and negative team behaviour are relatively new constructs, and little published literature is available for developing the measurement items for these two constructs. Thus, focus group discussions were deemed necessary for the questionnaire development.

In terms of the number of participants that need to be involved in a focus group discussion, several researchers note that a full focus group discussion may usually require six to ten participants (Calder, 1977; Zikmund, 2013). However, mini-focus groups with four to six participants are considered an effective way to make participants feel comfortable and to encourage in-depth discussion (Denzin & Lincoln, 2005; Edmunds, 1999; Iphofen, 2018). Furthermore, Gray (2014) suggests that focus group participants should be as homogeneous as possible. Following these recommendations, three mini-focus groups were conducted in New Zealand after obtaining approval from the Lincoln University Human Ethics Committee (HEC) (approval number: 2020-16). Each focus group consisted of five to six participants who were aged between 25 and 45 and had attended at least one live NBA game in the previous 12 months. The first focus group consisted of five participants - three males and two females. The second focus group consisted of six participants - four males and two females. The third focus group consisted of six participants - three males and three females. The demographic characteristics of the focus group participants are consistent with the gender and age profile of NBA spectators (Gough, 2021c, 2021d; Jang et al., 2020).

The focus groups began with a brief introduction of the objectives of this research and the purpose of the focus group discussions, as explained by the researcher. The conceptual research model was then presented to the participants so that they could have a better understanding of the research design. The domain of each construct included in the research model was described to the participants as suggested by Churchill (1979). During the focus group discussions, participants were first asked about their understandings of loyalty in the context of the NBA. Participants suggested that 'spectator loyalty', 'fan loyalty' and 'team loyalty' were proximate to each other and could be used interchangeably. The participants also reached an agreement that 'spectator loyalty' was a broader concept which could refer to fans' loyalty towards the team, the league or the brand. Therefore, 'team loyalty' was used in the present research, defining as fans' deeply held commitment to a sports team that could influence their cognitive thoughts and behaviours. The researcher then showed the participants the measurement items, which were derived from the literature review, for team loyalty. The focus group members were encouraged to assess whether the items represented the construct appropriately.

The following step involved asking the participants to evaluate their overall experiences of attending live NBA games with respect to spectator satisfaction. Participants were requested not to concentrate on one particular encounter if they had attended more than one live NBA game.

Participants were also asked to list all factors that influenced their perceptions of service quality provided in the live NBA game/s that they had attended. The proposed measurement items for

service quality were then discussed with the participants in order to assess whether the statements were clear and easy to understand. A similar approach was used to generate measurement items for the team image and team engagement constructs.

An in-depth discussion was then conducted relating to the constructs of negative team behaviour and player loyalty. First, the domain of each construct was explained to the participants. Participants were then asked to identify all factors that contributed to their perceptions regarding each construct. The final step involved a discussion on the proposed measurement items for the two constructs. Participants were also encouraged to discuss additional items that might add clarification for the two constructs.

A draft questionnaire was developed based on the findings from the literature review and focus group discussions.

4.3.2 Pre-testing Procedure

The draft questionnaire was pre-tested following the recommendations of several scholars (Gray, 2014; Quinlan et al., 2015; Zikmund, 2013). Boateng et al. (2018) note that “pre-testing helps to ensure that items are meaningful to the target population before the survey is actually administered, e.g., it minimizes misunderstanding and subsequent measurement error” (p.7). The pre-testing process involved evaluating the face validity, content validity and reliability of the measurement items used in the questionnaire ((Malhotra, 2010). Face validity means that the measurement instrument measures what it is intended to measure, based on the research objectives, and does not measure what it is not intended to measure (Kline, 2016). Content validity assesses “whether test items are representative of the domain they are supposed to measure” (Kline, 2016, p. 60). The pre-testing was conducted via the following two steps.

In the first step, the face validity and content validity of the questionnaire were assessed by an expert panel consisting of two service marketing experts and two sports industry experts (Boateng (Boateng et al., 2018; DeVellis & Thorpe, 2022; Kline, 2016). These experts were knowledgeable about both the domain of interest and survey scale development. The panel examined the relevance of the content, the representativeness of the measurement items, and the accuracy of the questionnaire statements.

The second step of the pre-testing involved distributing the questionnaire to 50 NBA spectators who had attended at least one live game in the previous 12 months. Respondents were asked to evaluate if any questions in the questionnaire were unclear, ambiguous, or hard to answer. Some minor modifications were made to the questionnaire after the pre-testing process. The reliability of

the measurement items for each construct was also tested. The test results revealed that all constructs were reliable with Cronbach's alpha values greater than 0.7 (Hair et al., 2014).

4.3.3 Layout of the Final Questionnaire

The final questionnaire consisted of three sections (see Appendix A). Section One contained two screening questions to check respondents' eligibility for participation and their frequency of attending live NBA games. Section Two included statements of the seven constructs. The statements for each construct are displayed in Table 4.1. A standard seven-point Likert-type scale ranging from Strongly Disagree (1) to Strongly Agree (7) was used in this section. Section Three contained questions about respondents' demographic information, including their residential location, gender, age, highest education level, occupation, income range, length of being an NBA fan, and favourite NBA team.

Table 4.1 The Measurement Items for Service Quality, Spectator Satisfaction, Team Image, Team Engagement, Negative Team Behaviour, Player Loyalty and Team Loyalty

Construct	Code	Description
Service Quality (5 items)	SQ1	Overall, the quality of my interactions with all employees involved in the live NBA games I attend is excellent.
	SQ2	Overall, the physical environment (e.g., atmosphere, stadium design, seating quality, sound and visuals) at the live NBA games that I attend is excellent.
	SQ3	Generally, I have enjoyable interactions with other spectators when I attend live NBA games.
	SQ4	Generally, I receive my desired outcome (e.g., game competitiveness and entertainment) when I attend live NBA games.
	SQ5	Overall, the service quality of the live NBA games I attend is excellent.
Spectator Satisfaction (4 items)	ST1	I normally have a satisfying experience attending live NBA games.
	ST2	Generally, I feel I have made the right decision to attend live NBA games.
	ST3	Overall, I think attending live NBA games is a satisfying experience.
	ST4	Overall, I am satisfied with my decision to attend live NBA games.
Team Image (5 items)	TI1	I believe that my favourite NBA team has a better image than its competitors.
	TI2	My favourite NBA team has a good reputation.
	TI3	My general impression of my favourite NBA team is good.
	TI4	Overall, I am impressed by the brand image of my favourite NBA team.
	TI5	Overall, I think my favourite NBA team has a positive image in the market.

Team Engagement (8 items)	TE1	I follow my favourite NBA team on social media platform(s).
	TE2	Any media information on my favourite NBA team attracts my attention.
	TE3	I discuss the performance of my favourite NBA team with my friends and family.
	TE4	I am interested in the community outreach of my favourite NBA team.
	TE5	I enjoy interacting with other fans of my favourite NBA team.
	TE6	I still support my favourite NBA team, even if the team performs worse than I expected
	TE7	I'm reluctant to display my connection with my favourite NBA team when they play poorly.
	TE8	I enjoy participating in activities to increase the local fan base of my favourite NBA team.
Negative Team Behaviour (6 items)	NTB1	Negative on-court team behaviour (e.g., violence and poor sportsmanship) of my favourite NBA team lowers my impression of the team.
	NTB2	Negative off-court team behaviour (e.g., doping and illegal betting) lowers my impression of my favourite NBA team.
	NTB3	Negative on/off-court team behaviour of my favourite NBA team harms the team's reputation.
	NTB4	I am ashamed when I hear of negative on/off-court team behaviour of my favourite NBA team.
	NTB5	Overall, I think the image of my favourite NBA team will be damaged due to negative on/off-court team behaviour.
	NTB6	Overall, negative on/off-court team behaviour of my favourite NBA team reduces my support for the team.
Player Loyalty (4 items)	PL1	If my favourite player leaves my favourite NBA team, I will stop following the team.
	PL2	If my favourite player leaves my favourite NBA team, I will not support the team.
	PL3	If my favourite player is traded to another NBA team, I will follow the player and support the new team.
	PL4	If my favourite player signs with another NBA team, I will follow the player and support the new team.
Team Loyalty (5 items)	TL1	I speak positively about my favourite NBA team.
	TL2	I recommend my favourite NBA team to other people.
	TL3	I encourage relatives and friends to attend games played by my favourite NBA team.
	TL4	I will attend NBA games of my favourite team in the future.
	TL5	My first choice is to attend NBA games played by my favourite team.

4.4 Method of Data Collection

The following subsections discuss the method of data collection used in this research, including sample derivation, sample size, sampling method and data collection procedures.

4.4.1 Sample Derivation

The research sample was drawn from NBA fans who had attended at least one live NBA game between January 2019 and January 2020. The primary data were initially going to be collected at the gate of the Staples Centre in Los Angeles, the United States of America. The Staples Centre is the home arena for two NBA teams - the Los Angeles Lakers and the Los Angeles Clippers - and is near shopping malls, cafes, restaurants and tertiary institutions. However, due to the COVID-19 pandemic (World Health Organization, 2020a) and the measures implemented to contain the outbreaks in New Zealand and the United States, the researcher was unable to travel to the United States to collect primary data in person. Instead, a self-administrated online survey was used to collect the research data.

The online survey was made available to fans of 30 NBA teams on Facebook. Facebook was chosen because the target population for this research were represented in high proportions on this social media platform (Gough, 2021e; Machado et al., 2020; Sorilbran, 2020). Firstly, there is a commonality between NBA spectators and Facebook users in terms of age. In the United States, NBA spectators, with an average age of 36 years, are relatively young in contrast to other major professional sports leagues (Adgate, 2018; Sorilbran, 2020). A recent NBA survey shows that approximately 50% of avid NBA fans with high game attendance are aged 18-44 years (Gough, 2021c). Eighteen-to 44-year-olds also represent a majority of Facebook users in the United States, accounting for approximately 60% of total Facebook users in the country (Statista, 2021a).

Secondly, Facebook is one of the most popular social media platforms for team-fan interactions in the NBA (Achen et al., 2018; Gough, 2021e; Machado et al., 2020; Moyer et al., 2015; Pronschinske et al., 2012; Wang & Zhou, 2015). Wang and Zhou (2015) noted that NBA spectators had a constant need to consume brand-related content, such as content about their favourite players, team performance and the transfer market. Facebook plays a critical role in meeting these needs by providing a platform where NBA spectators can engage with their favourite teams and communicate about shared interests among fans (Achen et al., 2018; Machado et al., 2020). The official NBA Facebook account had more than 39 million followers as of March 2021, about 6.5 million more than the number of followers of the NBA's Twitter account (Gough, 2021e). Each NBA team also has a large number of followers on Facebook (Gough, 2021e). For example, the Los Angeles Lakers had 21.75 million followers in March 2021, which was the most followed NBA team on Facebook (Gough, 2021e).

Despite acting as a platform for team-fan interaction, Facebook also plays an essential role in ticket sales in the NBA (Moyer et al., 2015). During the 2018-19 NBA season, Facebook advertisements helped the Miami Heat boost single-game ticket sales and generate more than 6900 qualified

season ticket leads (Facebook, 2020). Surveying 8,000 people from the United States or Canada who had purchased tickets, including sporting events tickets, from Ticketmaster, Fisher (2012) found that selling tickets on social media platforms such as Facebook was three times more effective than selling them on traditional ticket sales platforms. The author noted that 14% of the surveyed ticket buyers attended a sports game influenced by a Facebook post, 20% of the surveyed ticket buyers used Facebook to invite friends to attend games with them, and 49% of the ticket buyers used Facebook to share their live game experiences.

Lastly, most NBA fan groups on Facebook check members' eligibility for joining the group (e.g., Warriors Nation, Los Angeles Lakers, and Denver Nuggets Die Hard Fans). Eligibility questions such as the frequency of attending live NBA games, general knowledge of the league, and specific information about each NBA team are commonly asked when people apply to join the groups.

4.4.2 Sample Size

Several scholars note that sample size may be determined by the requirements for the data analysis techniques used in the research (Hair et al., 2014; Kline, 2016). In the present research, four data analysis techniques were used – confirmatory factor analysis (CFA), structural equation modelling (SEM), multi-group comparison analysis (MGA), and one-way analysis of variance (ANOVA). While consensus has not been reached on the minimum required sample size, most researchers suggest that SEM requires a large sample to generate a reliable test result (Blunch, 2013; Hair et al., 2014; Kline, 2016). The minimum required sample size for SEM is affected by five factors: “(1) multivariate normality of the data, (2) estimation technique, (3) model complexity, (4) the amount of missing data, and (5) the average error variance among the reflective indicators” (Hair et al., 2014, p. 573). Hair et al. (2014) note that if a research model contains seven or fewer constructs with modest communalities (0.5) and no under-identified constructs, the minimum sample size is 150 (Hair et al., 2014). Kline (2016) suggests that the required minimum sample size for SEM is 200. Tabachnick and Fidell (2013) note that a sample size larger than 400 may make the statistical tests too sensitive and cause goodness-of-fit indices to suggest a poor fit. Following these recommendations, the targeted sample size for the present research was between 200 and 400.

4.4.3 Sampling Method

Probability sampling and non-probability sampling are the two main categories of sampling methods (Quinlan et al., 2015; Zikmund, 2013). Probability sampling is a sampling technique in which “every member of the population has a known, non-zero probability of selection” (Zikmund, 2013, p. 392). In contrast, non-probability sampling refers to a sampling technique in which “units

of the sample are selected on the basis of personal judgement or convenience, and the probability of any particular member of the population being chosen is unknown” (Zikmund, 2013, p. 392).

Although the research findings resulting from probability sampling are claimed to be generalisable to the entire population being studied (Quinlan et al., 2015), this sampling method is time-consuming and expensive (Cochran, 1977; Quinlan et al., 2015). Furthermore, several scholars note that probability sampling may not be always possible because researchers may wish to study a group from which there is no sampling frame to randomly sample (Arnab, 2017; Bryman & Bell, 2015; Quinlan et al., 2015; Zikmund, 2013). Instead, non-probability sampling is often adopted in situations where compiling a complete sampling frame is not feasible (Arnab, 2017; Cochran, 1977; Quinlan et al., 2015; Zikmund, 2013).

Convenience sampling, a non-probability sampling technique, was used in the present research. The convenience sampling technique was deemed appropriate for several reasons. Firstly, it would not be possible to obtain a complete list of all NBA fans across all teams. Without a complete sampling frame, it would be impossible to guarantee every NBA fan has an equal probability of being included in the sample (Quinlan et al., 2015). Thus, probability sampling was not feasible in such circumstances. Secondly, Leary (2004) notes that non-probability sampling is appropriate for research which aims to test theoretical hypotheses or premises. The present research aims to test the interrelationships among seven targeted higher-order marketing constructs, and therefore the non-probability sampling method was deemed appropriate (Arnab, 2017; Cochran, 1977; Leary, 2004; Zikmund, 2013).

4.4.4 The Data Collection Procedure

A self-administered online survey, built on the website platform Qualtrics, was used to collect primary data (see Section 4.4.1). Online surveys have been used successfully in recent marketing research in the sports industry (e.g., Achen et al., 2018; Harker, 2021; Lee & Kwak, 2017; Machado et al., 2020; Mariani et al., 2019; Moyer et al., 2015). Online surveys are time- and cost-effective and can help minimise social desirability bias (Boni, 2020; Machado et al., 2020; Moyer et al., 2015; Vale & Fernandes, 2018). More importantly, online surveys offered ease of implementation when collecting primary data during the COVID-19 pandemic (Boni, 2020).

Several steps were undertaken to help obtain valid respondents and ensure data validity. The researcher communicated the objectives of this survey with the administrators of the Facebook NBA groups. These administrators helped promote this survey in their groups and encouraged the participants to provide genuine responses to this survey. Given that the administrators are usually the founder of these groups and can have considerable influences on group members’ behaviours

(Wright, 2005), their endorsement of this survey could help ensure the survey was completed by the subject respondents in a genuine manner (Wright, 2005). The researcher also included her contact details, academic credentials and information about this research when creating an invitation to participate in this survey. This may help enhance the credibility of this survey and could potentially encourage the respondents to genuinely participate in this survey (Fricker, 2016; Putri et al., 2022; Wright, 2005).

Data collection took place for six weeks between 28 April 2020 and 10 June 2020. The online survey link was made available for fans of 30 NBA teams through 150 exclusive Facebook Groups. An information sheet (see Appendix A) was presented at the beginning of the survey. The information sheet explained the purpose of the research, the eligibility of respondents, the estimated time for completing the questionnaire, the confidentiality of responses, and contact information for the researcher and her supervisors. Following participants' consent, a screening question was asked: 'Have you attended any live NBA game(s) in the last 12 months (from January 2019 to January 2020)?'. If participants answered no, they would be directed to the end of the survey. Only those participants who answered yes could access the full questionnaire. Respondents did not receive any incentive for participating in the present research.

4.5 Preliminary Data Analysis

The collected raw data were analysed initially to ensure the data were valid and met the underlying statistical assumptions (Hair et al., 2014; Kline, 2016; Meyers et al., 2013). Data violating statistical assumptions may seriously affect the estimation process and result in a poor model fit in SEM (Hair et al., 2014; Kline, 2016). The preliminary data analysis involved examining missing data, identifying outliers, and testing normality (Hair et al., 2014; Tabachnick & Fidell, 2013). The Statistical Package for the Social Sciences (SPSS) version 26 software programme was used to conduct the preliminary data analysis.

4.5.1 Missing Data

Missing data refers to invalid values on one or more variables in the questionnaire (Hair et al., 2014). Various factors could cause a missing value, including equipment malfunctions, or respondents suffering from fatigue or lack of motivation to keep responding (Meyers et al., 2013; Tabachnick & Fidell, 2013). Missing data can affect the generalisability of the data analysis results (Hair et al., 2014). Meyers et al. (2013) note that SEM based on the Maximum Likelihood estimation method should not be carried out if the dataset contains missing data and they are not substituted.

The missing data analysis began with examining the number of missing values on individual cases and variables. The following step assessed the pattern of the missing data to determine whether

they were distributed randomly across cases and variables (Kline, 2016). There are three patterns of missing data: 'missing completely at random' (MCAR); 'missing at random' (MAR); and 'missing not at random' (MNAR). Little's MCAR test was conducted to determine the missing data pattern (Meyers et al., 2013). Since there were only a few missing values and they were MCAR, the mean substitution method was used to replace the missing values in the present research (Hair et al., 2014).

4.5.2 Outliers

Outlier refers to "observations with a unique combination of characteristics identifiable as distinctly different from other observations" (Hair et al., 2014, p. 62). Outliers can be detected through three methods: 'univariate'; 'bivariate'; and 'multivariate' (Meyers et al., 2013). The bivariate method can generate a large number of scatterplots that arise as the number of variables increases (Hair et al., 2014). Therefore, Hair et al. (2014) recommend that "researchers should limit the general use of the bivariate method to specific variable relationships, such as the relationship of the dependent versus independent variables in regression" (p.64). Following these recommendations, only the univariate and multivariate detection methods were used for detecting outliers in this research.

A univariate outlier is an unusual, unexpected or out of scope value for a single variable (Tabachnick & Fidell, 2013). Univariate outliers were identified by inspecting the frequency distribution of z scores (Meyers et al., 2013). For large sample sizes, Hair et al. (2014) recommend considering cases with z scores greater than 4 in absolute value as potential outliers. Multivariate outliers refer to unusual or unexpected cases with regard to the relationship between multiple variables (Tabachnick & Fidell, 2013). Multivariate outliers were detected using the Mahalanobis distance statistical method (Meyers et al., 2013). The method measures the multivariate distance between each observation and the mean of all observations (Kline, 2016; Meyers et al., 2013).

Several scholars suggest that researchers need to make a careful decision to delete the identified outliers (Hair et al., 2014; Meyers et al., 2013; Osborne, 2013; Pallant, 2016). Deleting outliers often generates other outlying cases (Pallant, 2016), while transforming outliers may have a significant effect on the data analysis result (Osborne, 2013). Hair et al. (2014) note that outliers should be retained unless there is demonstrable evidence that they are "truly aberrant and not representative of any observations in the population" (p.65).

4.5.3 Normality

Normality refers to "the shape of the data distribution for an individual metric variable and its correspondence to the normal distribution" (Hair et al., 2014, p. 69). There are two main measures of normality - skewness and kurtosis (Kline, 2016). Skewness refers to the symmetry of distribution,

while kurtosis refers to the peakedness or flatness of a distribution (Tabachnick & Fidell, 2013). The values of skewness and kurtosis are frequently assessed to determine if an observed variable is normally distributed (Tabachnick & Fidell, 2013). In the present research, an observed variable was considered normally distributed if the value of skewness ranged between -3 and 3 and the value of kurtosis ranged between -8 and 8, as suggested by Kline (2016).

4.6 Data Analysis Techniques

The four data analysis techniques used in this research were – CFA, SEM, MGA, and One-way ANOVA. The Analysis of Moment Structures (AMOS) version 26 and the SPSS version 26 software programmes were used to conduct data analysis.

4.6.1 Structural Equation Modelling

SEM is an advanced multivariate technique that examines the relationships among multiple variables (Hair et al., 2014). SEM has three key characteristics: “(1) the estimation of multiple and interrelated dependence relationships; (2) an ability to represent unobserved concepts in these relationships and correct for measurement error in the estimation process; (3) a focus on explaining the covariance among the measured items” (Hair et al., 2014, p.590). Several scholars suggest that SEM is most appropriate for research involving multiple constructs where the constructs are distinguished based on whether they are exogenous or endogenous in the research model (Hair et al., 2014; Kline, 2016; Meyers et al., 2013). The present research aims to investigate the interrelationship among seven targeted higher-order marketing constructs. Therefore, SEM was a suitable data analysis technique for achieving the research objectives.

There are two common approaches for conducting SEM - the ‘one-step’ approach, and the ‘two-step’ approach (Anderson & Gerbing, 1988; Kline, 2016; Meyers et al., 2013). The one-step approach involves analysing the measurement model and the structural model at the same time, while the two-step approach involves analysing the two models separately (Anderson & Gerbing, 1988; Meyers et al., 2013). Under the two-step approach, the measurement model is evaluated before testing the structural model (Hair et al., 2014). If a satisfactory measurement model is not obtained, the entire structural model will perform poorly, and testing of the structural model may even become meaningless (Jöreskog & Sörbom, 1993; Meyers et al., 2013). Several scholars recommend using the two-step approach to conduct SEM (Anderson & Gerbing, 1988; Hair et al., 2014; Meyers et al., 2013). The advantages of the two-step approach include: “allowing tests of the significance for all pattern coefficients; allowing an assessment of whether any structural model would give acceptable fit; and enabling an asymptotically independent test of the substantive or

theoretical model of interest” (Anderson & Gerbing, 1988, p. 422). Following these suggestions, the two-step approach was used to conduct SEM in the present research.

4.6.1.1 Measurement Model - CFA

The measurement model specifies how latent variables are represented by their indicator variables (Hair et al., 2014). CFA is often used to test the measurement model (Collier, 2020; Hair et al., 2014). In the present research, the measurement model consisted of seven latent variables. The model was tested and validated by CFA through the following procedures: (1) reflective versus formative models; (2) model identification; (3) model-fit-indices; (4) model modification if necessary; and (5) reliability and validity tests (Hair et al., 2014).

4.6.1.1.1 Reflective Versus Formative Measurement Models

The direction of causality between a construct and its indicator items affects the measurement theory (Jarvis et al., 2003). Two opposite directions of causality lead to two types of measurement models: the reflective measurement model; and the formative measurement model (Hair et al., 2014). A reflective model assumes that the latent construct causes the indicator items, while a formative model assumes that the indicator items cause the construct (Bollen & Lennox, 1991; Jarvis et al., 2003).

The reflective model and the formative model are distinct from each other in several ways. Firstly, the two models require different construct validation processes (Hair et al., 2014). In a reflective model, all indicators are highly correlated and caused by the same latent construct (Jarvis et al., 2003). Therefore, the internal consistency of indicators and reliability are useful validation criteria for reflective models (Hair et al., 2014; Jarvis et al., 2003). In contrast, indicator items in a formative model collectively determine the conceptual and empirical meaning of the construct (Bollen & Lennox, 1991). These formative indicators do not necessarily need to be correlated, and they may even be completely uncorrelated or mutually exclusive (Jarvis et al., 2003). Thus, the internal consistency of indicators is not an appropriate validation criterion for formative models (Bollen & Lennox, 1991; Hair et al., 2014; Jarvis et al., 2003).

Another difference between reflective models and formative models is the consequences of deleting indicator items (Hair et al., 2014; Jarvis et al., 2003). Dropping an indicator from a reflective model does not alter the meaning of the construct, as individual indicators are equally valid to the underlying construct, and any two equally reliable indicators are interchangeable (Jarvis et al., 2003). As a result, indicators with low factor loadings can be deleted from reflective models without serious consequences if a construct retains a sufficient number of indicators (Hair et al., 2014). However, dropping any formative indicator may change the meaning of the latent construct,

as each indicator represents a unique part of the construct (Bollen & Lennox, 1991; Jarvis et al., 2003).

Furthermore, multi-collinearity among indicators can be a significant problem for formative models because the parameters linking formative indicators to the construct can be unreliable (Hair et al., 2014; Jarvis et al., 2003). However, high collinearity among indicators is not an issue in reflective models (Jarvis et al., 2003).

Several scholars note that reflective measurement models are appropriate for measuring social science constructs such as attitude and behavioural intention (Bollen & Lennox, 1991; Fornell & Bookstein, 1982; Hair et al., 2014; Jarvis et al., 2003). Following these recommendations, reflective measurement models were developed and analysed in the present research.

4.6.1.1.2 Model Identification

Model identification is related to whether a measurement model has sufficient information to identify a solution for a set of structural equations (Hair et al., 2014; Meyers et al., 2013). The model identification process involved assessing the difference between the number of known elements in the model and the number of parameters to be estimated by the model (Meyers et al., 2013).

Known elements in a model refer to “(1) entries in a covariance or correlation matrix for the dependent variables; (2) variances and coefficients of various sorts (correlations coefficients, pattern coefficients and structure coefficients) for the paths of the independent variables” (Meyers et al., 2013, p.863). The formula for counting the number of known elements is:

$$\text{the number of known elements} = \frac{V(V+1)}{2},$$

where V is the number of measurement items in the model (Meyers et al., 2013).

Parameters to be estimated in a model refer to “(1) the pattern or structure coefficients relating the independent to the dependent variables; (2) the correlation coefficients relating the independent variables to each other; (3) the variance of the independent variables” (Meyer et al., 2013, p.862).

Subtracting the number of parameters to be estimated from the number of known elements leads to the degrees of freedom (df) for the analysis (Kline, 2016). Df is used to determine the level of model identification (Meyers et al., 2013; Kline, 2016). There are three levels of model

identification: 'under-identified'; 'just-identified'; and 'over-identified' (Byrne, 2016; Hair et al., 2014).

An under-identified model refers to a model that has a negative df, with more parameters to be estimated than known elements (Hair et al., 2014). A just-identified model is a model that has an equal number of known elements and parameters to be estimated, and thus the model has zero df (Byrne, 2016). An over-identified model has a positive df, with more known elements than parameters to be estimated (Byrne, 2016). Several scholars suggest that an over-identified model is desired when conducting CFA and SEM (Bagozzi & Yi, 1988; Blunch, 2013; Byrne, 2016; Hair et al., 2014; Kline, 2016).

4.6.1.1.3 Model Fit Indices

Model fit refers to the similarity of the estimated covariance matrix (theory) to the observed covariance matrix (reality) (Bagozzi & Yi, 1988; Collier, 2020; Hu & Bentler, 1998). Model fit is assessed using various model fit indices, and these indices are generally classified into three schemes – 'absolute', 'incremental', and 'parsimonious' fit indices (Hair et al., 2014). Several scholars recommend reporting multiple indices from different schemes in order to reflect diverse criteria (Hair et al., 2014; Meyers et al., 2013; Schumacker & Lomax, 2004). However, there is no need to report all model fit indices, as they are often redundant (Hair et al., 2014; Meyers et al., 2013). Hair et al. (2014) suggest that reporting the Chi-Square (χ^2) value and degrees of freedom, comparative fit index (CFI) or Tucker Lewis index (TLI), and root mean square error of approximation (RMSEA) will usually provide adequate evidence of model fit. Following these recommendations, the normed Chi-Square (χ^2/df), goodness-of-fit index (GFI), standardised root mean residual (SRMR), RMSEA, CFI, and TLI were used to assess model fit in the present research. These fit indices and their thresholds are summarised in Table 4.2 and explained as follows:

1. The normed Chi-Square (χ^2/df) is the ratio of χ^2 to df for a model (Hair et al., 2014). χ^2 provides a measure of the differences between the observed covariance matrix and the estimated variances matrix implied by the model parameters (Meyers et al., 2013). A χ^2/df ratio equal to or less than 3 generally suggests a good model fit (Hair et al., 2014; Schumacker & Lomax, 2004).
2. GFI is one of the absolute indices which assesses the degree of similarity between the observed and implied covariance matrix (Jöreskog & Sörbom, 1993). The GFI values range from 0 to 1, with higher values indicating better fit (Hair et al., 2014; Jöreskog & Sörbom, 1993). GFI values greater than 0.9 usually suggest good fit (Byrne, 2016).

However, several scholars argue that an omnibus cut-off point of 0.9 for GFI is not appropriate under all situations because GFI may be significantly affected by sample size and model complexity

(Baumgartner & Homburg, 1996; Fan et al., 1999; Hu & Bentler, 1998; Sharma et al., 2005; Shevlin & Miles, 1998). Baumgartner and Homburg (1996) noted that “model complexity is an important factor contributing to the contingent nature of goodness-of-fit assessment, and the general rule of thumb that GFI should be greater than 0.9 may be misleading because it ignores such contingencies” (p.153). Sharma et al. (2005) also found that GFI was substantially influenced by sample size and model complexity, and was not very sensitive in detecting misspecified models. Therefore, the authors discouraged the use of GFI for assessing model fit. Likewise, Hu and Bentler (1998) noted that the percent of times the true model being rejected based on the cut-off value (0.9) for GFI was significantly impacted by sample size. Fan et al. (1999) also found that GFI was overly influenced by sample size and had a serious downward bias under smaller sample size conditions. Furthermore, Hair et al. (2014) note that GFI has become less popular because of the recent development of other fit indices. Based on these recommendations, GFI was only used as a screening tool in conjunction with other fit indices for assessing model fit in this research.

3. SRMR is a standardised value of the average residuals between the observed and predicted covariances (Kline, 2016). SRMR, scaled between 0 and 1, is one of the badness-of-fit indices that lower values indicate better fit, whereas higher values indicate worse fit (Hair et al., 2014; Meyers et al., 2013). An SRMR value less than 0.1 usually suggests an acceptable model fit value (Kline, 2016).

4. RMSEA is another absolute measure widely used for model fit assessment (Byrne, 2016). RMSEA refers to “the average of the residuals between the observed correlation or covariance from the sample and the expected model estimated for the population” (Meyers et al., 2013, p.871). RMSEA is a badness-of-fit index, with lower values representing better fit (Hair et al., 2014). Hu and Bentler (1999) highly recommended using RMSEA because it was sensitive to model misspecification and effective for assessing model quality. An RMSEA value equal to or less than 0.08 usually suggests adequate fit (Byrne, 2016; Collier, 2020).

5. CFI is an incremental fit index that compares the fit of the proposed model to the fit of a null model (Meyers et al., 2013). In a null model, all observed variables are assumed to be uncorrelated (Hair et al., 2014). Several scholars suggest that CFI should be reported in SEM research (Byrne, 2016; Hu & Bentler, 1998; Meyers et al., 2013; Sharma et al., 2005). CFI values range from 0 to 1, and a value greater than 0.9 generally indicates good fit (Knight et al., 1994; Meyers et al., 2013). Knight et al. (1994) noted that CFI values between 0.8 and 0.89 indicated adequate but marginal fit.

6. TLI is one of the incremental fit indices representing the extent to which the proposed model has a better fit than the null model (Tucker & Lewis, 1973). A model with a higher TLI value suggests a

better fit than a model with a lower value (Hair et al., 2014). TLI values above 0.9 usually suggest good fit (Bentler & Bonett, 1980).

Table 4.2 Model Fit Indices and Recommended Thresholds

Model Fit Indices	Recommended Thresholds	Reference
Parsimonious Fit Indices		
χ^2/df	≤ 3.0	Hair et al. (2014) Schumacker and Lomax (2004)
Absolute Fit Indices		
GFI	≥ 0.9	Byrne (2016) Hu and Bentler (1999)
SRMR	≤ 0.1	Kline (2016)
RMSEA	≤ 0.08	Byrne (2016) Hair et al. (2014)
Incremental Fit Indices		
CFI	≥ 0.9	Byrne (2016) Hu and Bentler (1998) Meyers et al. (2013)
TLI	≥ 0.9	Bentler and Bonett (1980)

4.7.1.1.4 Model Modification

The initial proposed measurement model may need modification if it fails to achieve an adequate fit (Hair et al., 2014; Meyers et al., 2013). Model modification attempts to improve the model fit or address unsolved problems by detecting any misspecifications in the model (Byrne, 2016; Hair et al., 2014). The process of model modification usually involves deleting measurement item(s) or adding coefficients between constructs and measurement items (Hair et al., 2014; Meyers et al., 2013). However, several scholars suggest that model modification must align with statistical assumptions and theoretical integrity (Byrne, 2016; Hair et al., 2014; Meyers et al., 2013). Hair et al. (2014) note that anything more than a minor modification will severely damage the theoretical integrity of the measurement model, which will result in a new measurement model and potentially require a new data sample. Deleting more than 20% of the measurement items with respect to the construct they indicate is usually considered a ‘more than minor’ modification (Hair et al., 2014). However, deleting one or two measurement items from a large set of items is less consequential, and the research can proceed using the prescribed model and data after making suggested modifications (Hair et al., 2014; Meyers et al., 2013).

The standardised residuals and modification indices (MI) were used as diagnostics for model modification in the present research (Byrne, 2016; Meyers et al., 2013; Schumacker & Lomax,

2004). Residuals refer to the discrepancies between the sample covariance matrix and the estimated covariance matrix (Hair et al., 2014). The standardised residuals are the raw residuals divided by their standard errors (Jöreskog & Sörbom, 1993). Hair et al. (2014) advise that standardised residuals less than 2.5 in absolute value do not suggest a problem of an unacceptable degree of error, whereas standardised residuals greater than 4.0 in absolute value may indicate a possible misfit in the model. Deleting one of the items with a standard residual greater than |4.0| is a possible solution for model modification (Meyers et al., 2013). Hair et al. (2014) suggest that “standardized residuals between |2.5| and |4.0| deserve some attention but may not suggest any changes to the model if no other problems are associated with those two items” (p.621). Furthermore, some large standardised residuals may occur just because of sampling error, and therefore one or two of these large residuals may be acceptable (Hair et al., 2014).

MI represents the expected decrease in the χ^2 value by freeing a previously fixed path between parameters (Byrne, 2016). An MI value equal to or greater than 4 indicates that the model fit may be improved significantly by freeing the corresponding path (Hair et al., 2014).

4.7.1.1.5 Measurement Model Reliability and Validity

Several scholars suggest that assessing measurement model reliability and validity is essential in CFA (Anderson & Gerbing, 1988; Byrne, 2016; Hair et al., 2014; Kline, 2016; Meyers et al., 2013; Schumacker & Lomax, 2004). In the present research, reliability was examined by assessing Cronbach’s alpha and composite reliability (CR) (Anderson & Gerbing, 1988; Byrne, 2016; Hair et al., 2014). Validity was assessed by examining the level of model fit (see Section 4.5.1.1.3) and construct validity (Hair et al., 2014). Construct validity assessment involved testing convergent validity and discriminant validity (Kline, 2016; Meyers et al., 2013).

Reliability

Reliability was measured by testing Cronbach’s alpha and CR. Cronbach’s alpha measures the internal consistency of the measurement items (Cronbach & Meehl, 1955). The closer Cronbach's alpha value is to 1.00, the better the reliability (Cronbach & Meehl, 1955). The minimum threshold for Cronbach's alpha value is 0.7 for confirmatory research (Hair et al., 2014; Harrington, 2009; Meyers et al., 2013). A CR value greater than 0.7 indicates adequate construct reliability (Bagozzi & Yi, 1988; Byrne, 2016; Kline, 2016). The CR value was calculated using the following equation:

Equation 4.1 Composite Reliability

$$\text{Composite Reliability} = \frac{(\sum \text{Standardised Loadings})^2}{(\sum \text{Standardised Loadings})^2 + \sum \text{Measurement Errors}}$$

Source: Janssens et al. (2008, p. 307)

Convergent Validity

Convergent validity is the extent to which “indicators of a specific construct converge or share a high proportion of variance in common” (Hair et al., 2014, p. 601). Factor loadings and the average variance extracted (AVE) were used to assess convergent validity. A measurement model with all standardised factor loadings above 0.6 and statistically significant usually demonstrates adequate convergent validity (Anderson & Gerbing, 1988; Bagozzi & Yi, 1988; Hair et al., 2014). Another indication of adequate convergence validity is that the AVE of all constructs is 0.50 or higher (Fornell & Larcker, 1981). An AVE of 0.5 or higher suggests that the variance explained by the latent construct is equal to or larger than the measurement error (Hair et al., 2014). The AVE was calculated using the following equation:

Equation 4.2 Average Variance Extracted

$$AVE = \frac{\sum(\text{Standardised Loadings})^2}{\sum(\text{Standardised Loadings})^2 + \sum \text{Measurement Errors}}$$

Source: Janssens et al. (2008, p. 309).

Discriminant Validity

Discriminant validity is “the extent to which a construct is truly distinct from other constructs” (Hair et al., 2014, p.619). High discriminant validity suggests that a construct is unique and captures some phenomena while other measures do not (Harrington, 2009). Discriminant validity was assessed by checking the correlation between constructs (Kline, 2016). If the correlation coefficient between any two constructs is not greater than 0.85, discriminate validity is achieved (Cheung & Wang, 2017; Goursand et al., 2013; Kline, 2016; Martinez et al., 2015; Yokokura et al., 2017).

4.7.1.2 Structural Model

With the measurement model being confirmed, the proposed interrelationships, including the mediation effects, among the seven targeted constructs were tested in the structural model.

4.7.1.2.1 The Mediation Test

A mediation effect refers to the interference of a third variable on the causal relationship between the other two constructs (Hair et al., 2014). The third variable is called the mediator (Meyers et al., 2013). In the present research, the mediation effects were tested using Baron and Kenny’s (1986) two-step method. The first step involved testing the direct effect of the independent variable (X) (e.g., team image) on the outcome variable (Y) (e.g., team loyalty). The second step involved examining the causal relationship between X and Y with the mediator (M) included in the model. If

the causal effect from X to Y remains significant and unchanged, no mediating effect exists (Baron & Kenny, 1986). If the direct effect from X to Y becomes nonsignificant, full mediation is supported (Baron & Kenny, 1986; Collier, 2020; Hair et al., 2014). If the causal relationship between X and Y is reduced but remains significant, partial mediation occurs (Collier, 2020; Baron & Kenny, 1986; Hair et al., 2014).

4.7.1.2.2 The Multi-group Analysis

Multi-group analysis (MGA) was used to examine whether NBA spectators' perceptions of the interrelationships among the seven constructs vary across two age groups (Group 1: aged under 36 years; Group 2: aged 36 years or over). The age split was based on NBA spectators' average age of 36 years (Sorilbran, 2020). The MGA was conducted following Jöreskog's (1971) two-phase approach using the IBM SPSS AMOS version 26 software programme.

The first phase of the MGA involved comparing the unconstrained model and the constrained model to determine if there is an overall difference between the two age groups (Jöreskog & Sörbom, 1993; Meyers et al., 2013). The unconstrained model assumes that when applying the model to the data, the groups yield different values of the parameters (Meyers et al., 2013). The constrained model assumes that groups yield equivalent values of the parameters (Meyers et al., 2013). To determine if the two models were significantly different, the χ^2 difference test was conducted (Hair et al., 2014; Jöreskog, 1971). If the χ^2 test is statistically significant, there are differences across groups (Meyers et al., 2013; Tabachnick & Fidell, 2013). The IBM SPSS AMOS version 26 compares the unconstrained and constrained models from five different aspects - structural weights, structural intercepts, structural means, structural covariances, and structural residuals. The present research focused on the comparison of structural weights, referring to path coefficients (Meyers et al., 2013).

The second phase of the MGA examined the corresponding parameters of difference between two the age groups (Meyers et al., 2013). Z scores and critical ratios were used to assess the path coefficient differences (Hair et al., 2014).

4.7.1.3 One-Way Analysis of Variance

The sample set of the present research consisted of 188 males and 55 females, reflecting the dominance of male spectators in NBA game attendance (Gough, 2021d; Jang et al., 2020). However, Kline (2016) suggests that at least 100 observations per group are required for conducting MGA in SEM. Therefore, MGA was not used to examine gender differences. Instead, a one-way ANOVA was used to assess whether NBA spectators' perceptions of team loyalty vary between males and females. The IBM SPSS version 26 was used to conduct the one-way ANOVA.

The one-way ANOVA compared the means of two gender groups in order to determine if the associated population means are significantly different (Meyers et al., 2013). The test statistic for a one-way ANOVA is the F ratio or F statistic (Meyers et al., 2013). If the one-way ANOVA returns a statistically significant result ($p \leq 0.05$), there are statistically significant differences between group means (Hair et al., 2014). Alternatively, if the one-way ANOVA returns a nonsignificant result ($p > 0.05$), it indicates that there are no statistically significant differences between group means (Hair et al., 2014).

Chapter 5

Results

5.1 Introduction

This chapter discusses the results of the data analysis that was conducted following the procedures described in Chapter 4. The data analysis results include the response rate and preliminary data analysis (Section 5.2), demographic characteristics of the respondents (Section 5.3), descriptive analysis (Section 5.4), CFA (Section 5.5), and hypotheses testing (Section 5.6).

5.2 Response Rate and Preliminary Data Analysis

Data were collected from 28 April to 10 June 2020, totalling 295 survey responses. However, 52 responses were removed for missing more than 20% of their values (Roth et al., 1999; Sekaran & Bougie, 2016). This process resulted in 243 usable responses, yielding a response rate of 82%. The usable sample size was larger than the minimum sample size required for SEM (Hair et al., 2014; Kline, 2016).

To ensure that the useable dataset was free of early-late bias response, an independent sample t-test and Levene's test were performed to test the equality of means and variances (Armstrong & Overton, 1977). Based on the data collecting time, the valid responses were divided into two groups. The early response group consisted of 127 responses (52.3%) collected from 28 April to 17 May 2020. The late group consisted of 116 responses (47.7%) collected from 18 May to 10 June 2020. The test results showed that there were no statistically significant differences in terms of response means and variances between the early and late responses for each construct. The dataset is therefore not affected by non-response bias (Armstrong & Overton, 1977).

5.2.1 Missing Data

Missing data were assessed by using the missing value analysis function of the IBM SPSS version 26. Only a few missing values were observed, and no case or variable had a non-response rate of more than 5%. Furthermore, the missing values did not reflect a systematic pattern. Therefore, the mean substitution method was used to replace the missing values (Hair et al., 2014).

5.2.2 Outliers

Univariate outliers were examined by inspecting the frequency distribution of z scores (Meyers et al., 2013). Cases with z scores greater than 4 in absolute value were considered potential outliers (Hair et al., 2014). Multivariate outliers were detected using the Mahalanobis distance statistical

method (Meyers et al., 2013). Only a small number of cases were identified as potential outliers. They were retained to help ensure the generalisability of the population (Meyers et al., 2013; Osborne, 2013; Pallant, 2016; Tabachnick & Fidell, 2013).

5.2.3 Normality

Data normality was determined by assessing the values of skewness and kurtosis. An observed variable was considered normally distributed if the value of skewness ranged between -3 and 3 and the value of kurtosis ranged between -8 and 8 (Kline, 2016). In this research, the values of skewness ranged between -2.379 and 1.889, and the values of kurtosis ranged between -1.148 and 7.429 (see Appendix B). Therefore, the data set was considered normally distributed.

5.3 Demographic Characteristics of the Respondents

Tables 5.1-5.9 show the respondents' demographic characteristics, including their game attendance frequency, residential location, gender, age group, highest education level, occupation, income range, length of being an NBA fan, and favourite NBA team.

Table 5.1 Game Attendance Frequency

Games	Frequency	Percent	Cumulative Percent
1 game per year	63	25.9	25.9
2-5 games per year	114	46.9	72.8
More than 5 games per year	66	27.2	100
Total	243	100	

Table 5.1 shows that most respondents attended 2-5 NBA games per year (46.9%), followed by respondents attended more than five NBA games per year (27.2%), and respondents attended one NBA game per year (25.9%).

Table 5.2 Residential Location

State	Frequency	Percent	Cumulative Percent
California	64	26.3	26.3
Other states of the USA	179	73.7	100
Total	243	100	100

Table 5.2 indicates that 64 respondents (26.3%) resided in California, the United States; and 179 respondents (73.7%) resided in other states of the United States.

Table 5.3 Gender

Gender	Frequency	Percent	Cumulative Percent
Male	188	77.4	77.4

Female	55	22.6	100
Other	0	0	100
Total	243	100	

Table 5.3 shows that 188 respondents were male (77.4%), and 55 respondents were female (22.6%). The dominance of male spectators in this survey was consistent with the gender profile of NBA spectators (Gough, 2021e; Jang et al., 2020).

Table 5.4 Age

Age Group	Frequency	Percent	Cumulative Percent
18-25	62	25.5	25.5
26-35	73	30.0	55.6
36-45	53	21.8	77.4
46-55	28	11.5	88.9
56 or above	27	11.1	100
Total	243	100	

Table 5.4 shows that respondents aged 18 to 45 accounted for the largest proportion of the sample (77.4%). The sample was distributed relatively evenly among age groups 18-45 (aged 18-25: 25.5%; aged 26-35: 30%; aged 36-45: 21.8%); 11.5% of respondents fell in the 46-55 age group, and 11.1% of respondents were aged 56 or above.

Table 5.5 Highest Education Level

Education	Frequency	Percent	Cumulative Percent
High School	71	29.2	29.2
Junior College	46	18.9	48.1
Bachelor's degree	70	28.8	77
Master's degree	35	14.4	91.4
Doctorate Degree	6	2.5	93.8
Other	15	6.2	100
Total	243	100	

Table 5.5 indicates that 64.6% of respondents had either an undergraduate or a post-graduate degree. A further 29% of respondents had graduated from secondary school.

Table 5.6 Occupation

Occupation	Frequency	Percent	Cumulative Percent
Student	42	17.3	17.3
Professional	79	32.5	49.8
Business Owner	13	5.3	55.1
Government Employee	14	5.8	60.9
Hospitality Worker	7	2.9	63.8
Trades	23	9.5	73.3
Retired	11	4.5	77.8
Other	54	22.2	100
Total	243	100	

Table 5.6 shows that professionals accounted for 32.5% of the sample, followed by 'other' occupations (22.2%) and students (17.3%). The remaining proportions were made up by trades

(9.5%), government employees (5.8%), business owners (5.3%), retired (4.5%), and hospitality workers (2.9%).

Table 5.7 Monthly Income

Income	Frequency	Percent	Cumulative Percent
Less than \$2,000	53	21.8	21.8
\$2,000-\$3,999	70	28.8	50.6
\$4,000-\$5,999	52	21.4	72
\$6,000-\$7,900	16	6.6	78.6
\$8,000-\$9,999	22	9.1	87.7
\$10,000 or more	30	12.3	100
Total	243	100	

Table 5.7 illustrates that approximately 50% of respondents reported a monthly income between \$2,000 and \$5,999. Respondents with a monthly income less than \$2,000 accounted for 21.8% of the sample, whilst respondents with a monthly income of \$10,000 or more accounted for 12.3% of the sample.

Table 5.8 Length of Being an NBA Fan

History	Frequency	Percent	Cumulative Percent
Less than 1 year	1	0.4	0.4
1-5 years	21	8.6	9.0
More than 5 but less than 10 years	32	13.2	22.2
10 years or more	189	77.8	100
Total	243	100	

Table 5.8 shows that most respondents had been an NBA fan for 10 years or more (77.8%); 22.2% for 5 to 10 years (22.2%), and 9% for 1 to 5 years.

Table 5.9 Favourite NBA Team

Team	Frequency	Percent	Cumulative Percent
Los Angeles Lakers	13	5.3	5.3
Los Angeles Clippers	26	10.7	16
Golden State Warriors	12	4.9	21
Phoenix Suns	3	1.2	22.2
Sacramento Kings	16	6.6	28.8
Dallas Mavericks	1	0.4	29.2
Houston Rockets	5	2.1	31.3
Memphis Grizzlies	3	1.2	32.5
New Orleans Pelicans	1	0.4	32.9
Denver Nuggets	11	4.5	37.4
San Antonio Spurs	5	2.1	39.5
Minnesota Timberwolves	8	3.3	42.8
Oklahoma City Thunder	2	0.8	43.6
Portland Trail Blazers	33	13.6	57.2
Utah Jazz	24	9.9	67.1
Toronto Raptors	16	6.6	73.7
Boston Celtics	7	2.9	76.5
Brooklyn Nets	2	0.8	77.4
New York Knicks	2	0.8	78.2
Philadelphia 76ers	2	0.8	79
Chicago Bulls	3	1.2	80.2
Cleveland Cavaliers	1	0.4	80.7
Detroit Pistons	1	0.4	81.1
Indiana Pacers	15	6.2	87.2
Milwaukee Bucks	10	4.1	91.4
Atlanta Hawks	3	1.2	92.6
Charlotte Hornets	8	3.3	95.9
Miami Heat	3	1.2	97.1
Orlando Magic	6	2.5	99.6
Washington Wizards	1	0.4	100
Total	243	100	

As shown in Table 5.9, the sample consisted of fans from 30 NBA teams. Fans of Portland Trail Blazers, Los Angeles Clippers, Utah Jazz, Toronto Raptors, Sacramento Kings, Indiana Pacers, Los Angeles Lakers and Golden State Warriors accounted for 63.8% of the sample.

5.4 Descriptive Analysis

The following sections demonstrate the means and standard deviations of the measurement items for the seven constructs.

5.4.1 Service Quality

The mean values of service quality measurement items ranged from 5.98 to 6.18, and the standard deviations ranged from 0.904 to 1.144 (see Table 5.10). The grand mean was 6.08, indicating that respondents generally believed that the service quality provided during live NBA games was good.

Table 5.10 The Means and Standard Deviations of Service Quality

Code	Item	Mean	Std. Deviation
SQ1	Overall, the quality of my interactions with all employees involved in the live NBA games I attend is excellent.	6.02	1.144
SQ2	Overall, the physical environment (e.g., atmosphere, stadium design, seating quality, sound and visuals) at the live NBA games that I attend is excellent.	6.18	1.033
SQ3	Generally, I have enjoyable interactions with other spectators when I attend live NBA games.	5.98	1.141
SQ4	Generally, I receive my desired outcome (e.g., game competitiveness and entertainment) when I attend live NBA games.	6.10	0.904
SQ5	Overall, the service quality of the live NBA games I attend is excellent.	6.14	0.904

5.4.2 Spectator Satisfaction

The means of four spectator satisfaction items ranged from 6.3 to 6.46, and the standard deviations ranged from 0.78 to 0.938 (Table 5.11). The grand mean (6.4) suggested that respondents generally had satisfying experiences attending live NBA games.

Table 5.11 The Means and Standard Deviations of Spectator Satisfaction

Code	Item	Mean	Std. Deviation
ST1	I normally have a satisfying experience attending live NBA games.	6.30	0.938
ST2	Generally, I feel I have made the right decision to attend live NBA games.	6.38	0.78
ST3	Overall, I think attending live NBA games is a satisfying experience.	6.46	0.788
ST4	Overall, I am satisfied with my decision to attend live NBA games.	6.46	0.799

5.4.3 Team Image

The mean values of the team image measurement items ranged from 5.74 to 6.33, and the standard deviations ranged from 1.031 to 1.497 (Table 5.12). The grand mean value (6.01) revealed that respondents had a positive image of their favourite NBA team.

Table 5.12 The Means and Standard Deviations of Team Image

Code	Item	Mean	Std. Deviation
TI1	I believe that my favourite NBA team has a better image than its competitors.	5.76	1.441
TI2	My favourite NBA team has a good reputation.	5.74	1.497
TI3	My general impression of my favourite NBA team is good.	6.33	1.036
TI4	Overall, I am impressed by the brand image of my favourite NBA team	6.23	1.031
TI5	Overall, I think my favourite NBA team has a positive image in the market.	5.97	1.320

5.4.4 Team Engagement

The mean values of the team engagement items were all above the mid-point (4), except TE7 with a mean value of 2.36 (see Table 5.13). Following Hair et al.'s (2014) suggestion, the item-to-total correlations of all team engagement measurement items were further examined to assess their internal consistency. Rules of thumb are that the item-to-total correlations need to exceed 0.50, and measurement items with item-to-total correlations lower than 0.50 may be candidates for deletion, to improve construct reliability (Hair et al., 2014). The item-total correlation of TE7 was -0.165 (see Table 5.14), and therefore it was deleted (Hair et al., 2014). The elimination of TE7 was a minor modification, as no more than 20% of the total measurement items for team engagement were deleted (Hair et al., 2014). A minor modification is less consequential and may not jeopardise the confirmatory test (Hair et al., 2014; Meyers et al., 2013).

Table 5.13 The Means and Standard Deviations of Team Engagement

Code	Item	Mean	Std. Deviation
TE1	I follow my favourite NBA team on social media platform(s).	6.41	0.993
TE2	Any media information on my favourite NBA team attracts my attention.	6.37	0.910
TE3	I discuss the performance of my favourite NBA team with my friends and family.	6.35	0.998
TE4	I am interested in the community outreach of my favourite NBA team	5.73	1.369
TE5	I enjoy interacting with other fans of my favourite NBA team.	6.22	0.992
TE6	I still support my favourite NBA team, even if the team performs worse than I expected	6.53	0.745
TE7	I'm reluctant to display my connection with my favourite NBA team when they play poorly.	2.36	1.872
TE8	I enjoy participating in activities to increase the local fan base of my favourite NBA team.	5.57	1.357

Table 5.14 The Item-to-total Correlations of Team Engagement Measurement Items

Code	Scale Mean if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
TE1	39.13	.597	.665
TE2	39.18	.677	.656
TE3	39.20	.610	.662
TE4	39.81	.619	.645
TE5	39.32	.607	.663
TE6	39.01	.541	.686
TE7	43.19	-.165	.867
TE8	39.97	.562	.660

5.4.5 Negative Team Behaviour

The mean values of the negative team behaviour measurement items ranged from 3.42 to 5.26, and the standard deviations ranged from 1.580 to 1.985 (Table 5.15). The grand mean (4.46) was slightly above the mid-point (4.0) of the scale, implying that the respondents tended to disapprove negative team behaviour.

Table 5.15 The Means and Standard Deviations of Negative Team Behaviour

Code	Item	Mean	Std. Deviation
NTB1	Negative on-court team behaviour (e.g., violence and poor sportsmanship) of my favourite NBA team lowers my impression of the team.	4.14	1.830
NTB2	Negative off-court team behaviour (e.g., doping and illegal betting) lowers my impression of my favourite NBA team.	4.65	1.799
NTB3	Negative on/off-court team behaviour of my favourite NBA team harms the team's reputation.	5.26	1.580
NTB4	I am ashamed when I hear of negative on/off-court team behaviour of my favourite NBA team.	4.84	1.594
NTB5	Overall, I think the image of my favourite NBA team will be damaged due to negative on/off-court team behaviour.	4.47	1.826
NTB6	Overall, negative on/off-court team behaviour of my favourite NBA team reduces my support for the team.	3.42	1.895

5.4.6 Player Loyalty

The mean values of the player loyalty measurement items were all below the mid-point (4), ranging from 1.93 to 2.56 (Table 5.16). The grand mean (2.27) suggested that the respondents may not stop supporting their favourite NBA team if their favourite player leaves the team.

Table 5.16 The Means and Standard Deviations of Player Loyalty

Code	Item	Mean	Std. Deviation
PL1	If my favourite player leaves my favourite NBA team, I will stop following the team.	2.10	1.606
PL2	If my favourite player leaves my favourite NBA team, I will not support the team	1.93	1.500
PL3	If my favourite player is traded to another NBA team, I will follow the player and support the new team.	2.56	1.644
PL4	If my favourite player signs with another NBA team, I will follow the player and support the new team.	2.50	1.612

5.4.7 Team Loyalty

As shown in Table 5.17, the mean values of five team loyalty measurement items ranged from 6.16 to 6.61, and the standard deviations ranged from 0.694 to 1.091. The grand mean was 6.39.

Table 5.17 The Means and Standard Deviations of Team Loyalty

Code	Item	Mean	Std. Deviation
TL1	I speak positively about my favourite NBA team.	6.37	0.869
TL2	I recommend my favourite NBA team to other people.	6.21	0.988
TL3	I encourage relatives and friends to attend games played by my favourite NBA team.	6.16	1.091
TL4	I will attend NBA games of my favourite team in the future.	6.59	0.694
TL5	My first choice is to attend NBA games played by my favourite team.	6.61	0.721

5.5 Confirmatory Factor Analysis

CFA was conducted to examine if the specification of the seven latent variables matched the data. As shown in Figure 5.1, the initial measurement model contained 36 measurement items, with 666 known elements $(36[36+1])/2= 666$ and 93 parameters to be estimated (21 correlation coefficients; 29 path coefficients; 43 variances). The model was over-identified, with 573 degrees of freedom $(666-93=573)$.

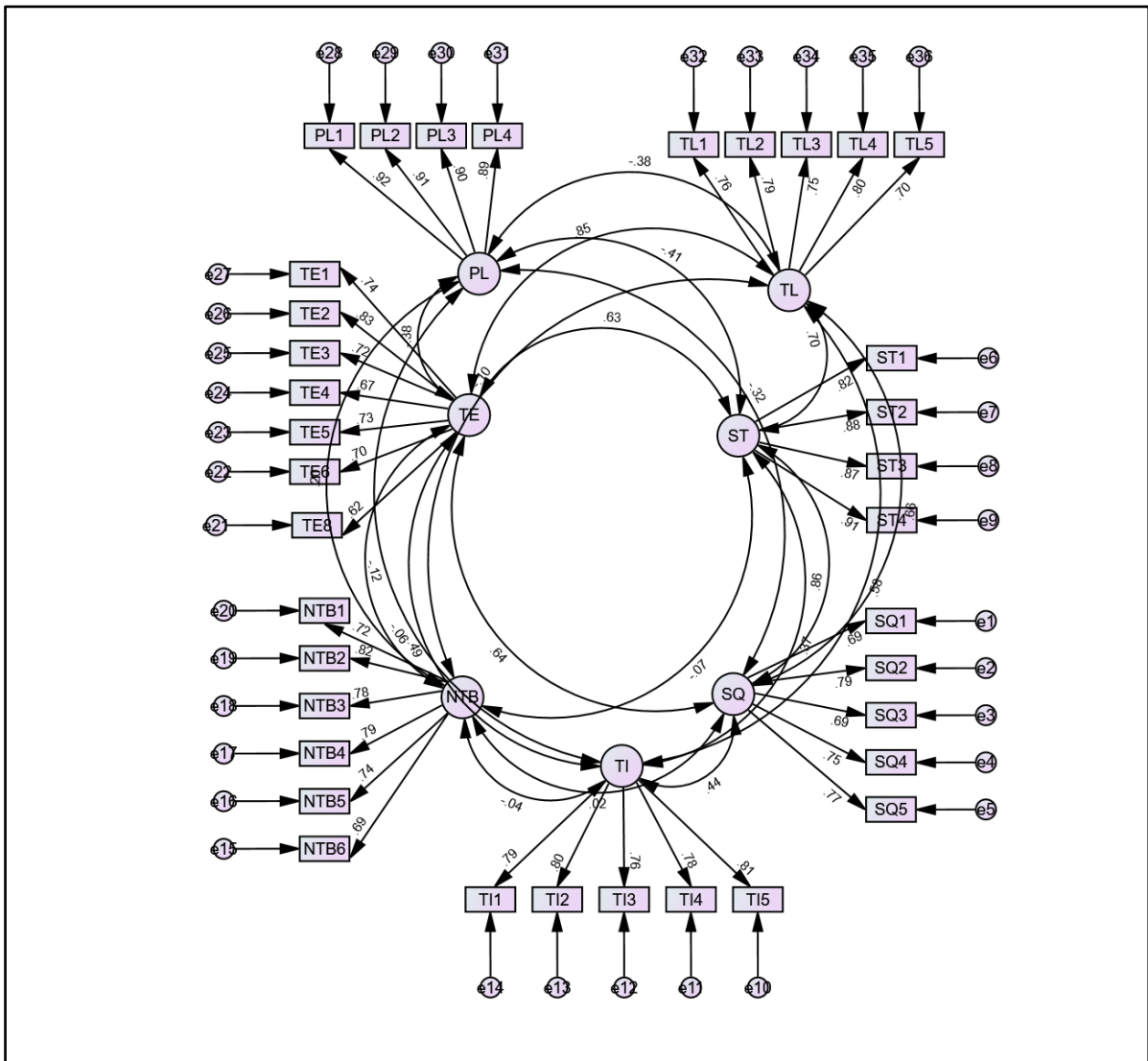


Figure 5.1 The Initial Measurement Model

(SQ = service quality; ST = spectator satisfaction; TI = team image; NTB = negative team behaviour; TE = team engagement; PL = player loyalty; TL = team loyalty)

As shown in Tables 5.18-5.25, the factor loadings of the measurement items were all above the acceptable value of 0.6, ranging from 0.621 to 0.919 (Bagozzi & Yi, 1988). Thus, the unidimensionality for the seven constructs was achieved.

Table 5.18 Factor Loadings for Service Quality

Item	SQ1	SQ2	SQ3	SQ4	SQ5
Factor Loading	0.686	0.789	0.689	0.754	0.772

Table 5.19 Factor Loadings for Spectator Satisfaction

Item	ST1	ST2	ST3	ST4
Factor Loading	0.822	0.880	0.869	0.906

Table 5.20 Factor Loadings for Team Image

Item	TI1	TI2	TI3	TI4	TI5
Factor Loading	0.791	0.802	0.758	0.781	0.811

Table 5.21 Factor Loadings for Negative Team Behaviour

Item	NTB1	NTB2	NTB3	NTB4	NTB5	NTB6
Factor Loading	0.723	0.825	0.784	0.786	0.741	0.693

Table 5.22 Factor Loadings for Team Engagement

Item	TE1	TE2	TE3	TE4	TE5	TE6	TE8
Factor Loading	0.739	0.828	0.724	0.673	0.731	0.697	0.621

Table 5.23 Factor Loadings for Player Loyalty

Item	PL1	PL2	PL3	PL4
Factor Loading	0.919	0.912	0.900	0.895

Table 5.24 Factor Loadings for Team Loyalty

Item	TL1	TL2	TL3	TL4	TL5
Factor Loading	0.759	0.794	0.753	0.799	0.701

Table 5.25 shows the goodness-of-fit indices of the initial measurement model. Most indices were in the acceptable range. However, the GFI was below the recommended threshold of 0.9.

Furthermore, the relatively high correlation (0.858) between service quality and spectator satisfaction indicated that there may be redundancy items in these two constructs (Kline, 2016).

Thus, some model modifications were deemed necessary to improve model fit (Byrne, 2016; Meyers et al., 2013).

Table 5.25 Goodness of Fit Indices of the Initial Measurement Model

Goodness of Fit Indices	Values
Chi-Square (χ^2)	1099.27
Degree of Freedom (df)	573
Normed Chi-square (χ^2/df)	1.918
Goodness of Fit Index (GFI)	0.787
Root Mean Square Error of Approximation (RMSEA)	0.062
Comparative Fit Index (CFI)	0.912
Tucker Lewis Index (TLI)	0.904
Standardized Root Mean Residual (SRMR)	0.063

The model modification process began with evaluating the standardised residuals and the MI values (Hair et al., 2014; Meyers et al., 2013). The standardised residuals were first assessed, and the test results revealed that the standardised residual covariance between NTB6 and PL1 was greater than 4. Thus, the two items were potential candidates for deletion (Hair et al., 2014). The MI values were then examined. The MI value of NTB6 was greater than 4, indicating that the model fit may be improved significantly by deleting the measurement item (Hair et al., 2014). Thus, NTB 6 was deleted. Indicators TL2, TI2 and SQ4 were further eliminated due to the high MI value (greater than 4). Table 2.25 illustrates the modification steps and the associated improvements in the goodness-of-fit indices.

Eliminating indicators NTB6, TL2, TI2 and SQ4 was considered a minor modification to the initial measurement model, as no more than 20% of the measurement items for each construct were deleted (Hair et al., 2014). The minor modifications were less consequential and may not jeopardise the confirmatory test (Hair et al., 2014; Meyers et al., 2013). Thus, the CFA proceeded using the prescribed model and data after making the modifications (Hair et al., 2014; Meyers et al., 2013).

Table 5.26 The Model Modification Process and the Goodness-of-Fit Indices Improvements

Model	χ^2/df	GFI	RMSEA	RSMR	TLI	CFI
Original Model	1.918	0.787	0.062	0.063	0.904	0.912
Deleting NTB6	1.889	0.796	0.061	0.057	0.909	0.918
Deleting TL2	1.826	0.810	0.058	0.056	0.917	0.925
Deleting TI2	1.750	0.822	0.056	0.052	0.926	0.933
Deleting SQ4	1.778	0.826	0.057	0.052	0.925	0.933

To test if the modified model provided a better fit than the initial model, a chi-square (χ^2) difference test was then conducted (Green & Babyak, 1997). The χ^2 value of the initial model was 1099.270 with 573 df. The χ^2 value of the modified model was 787.527 with 443 df. Subtracting the χ^2 value of the modified model from the χ^2 value of the initial model yielded the $\Delta\chi^2 (130) = 311.743$. Since the $\Delta\chi^2 (130) = 311.743$ was greater than the critical value of $\chi^2 (130), \alpha$:

0.05=157.610, the modified model provided a better fit than the initial model did (Bagozzi & Yi, 1988; Hair et al., 2014).

All goodness-of-fit indices were also improved after the modification process (see Table 5.27). Although GFI was still below 0.9, several scholars note that an omnibus cut-off point of 0.9 is not appropriate under all situations because GFI may be significantly affected by sample size and model complexity (Baumgartner & Homburg, 1996; Fan et al., 1999; Sharma et al., 2005; Shevlin & Miles, 1998). Baumgartner and Homburg (1996) noted that “model complexity is an important factor contributing to the contingent nature of goodness-of-fit assessment, and the general rule of thumb that GFI should be greater than 0.9 may be misleading because it ignores such contingencies” (p.153). Sharma et al. (2005) also found that the GFI may be substantially influenced by sample size and model complexity and is not very sensitive in detecting misspecified models. Therefore, the authors discouraged the use of GFI for assessing model fit. Likewise, Hu and Bentler (1998) noted that the percent of times for the true model being rejected, based on the cut-off value (0.9) for GFI, was significantly impacted by sample size. Fan et al. (1999) suggested that GFI was overly influenced by sample size and had a serious downward bias under smaller sample size conditions. Therefore, the modified measurement model showed an adequate model fit (Fan et al., 1999; Hair et al., 2010; Hu & Bentler, 1998; Kline, 2015; Meyers et al., 2013; Sharma et al., 2005).

Table 5.27 Goodness of Fit Indices of the Modified Measurement Model

Goodness of Fit Indices	Values
Chi-Square (χ^2)	787.527
Degree of Freedom (df)	443
Normed Chi-square (χ^2/df)	1.778
Goodness of Fit Index (GFI)	0.826
Root Mean Square Error of Approximation (RMSEA)	0.057
Comparative Fit Index (CFI)	0.933
Tucker Lewis Index (TLI)	0.925
Standardized Root Mean Residual (SRMR)	0.052

The modified measurement model also exhibited adequate reliability and validity. Firstly, the composite reliability of the seven latent constructs ranged from 0.832 to 0.948 (see Table 5.28), exceeding the recommended threshold value of 0.7 (Bagozzi & Yi, 1988; Byrne, 2016). The Cronbach’s alpha values of the seven constructs ranged from 0.817 to 0.948 (see Table 5.28), above the cut-off value of 0.7 (Hair et al., 2014). Thus, the reliability of the model was achieved.

Furthermore, the standardized factor loadings of all measurement items ranged from 0.613 to 0.922, which were statistically significant at the 0.001 level and above the cut-off value of 0.6 (Bagozzi & Yi, 1998). The AVEs ranged from 0.516 to 0.821, also above the recommended threshold

value of 0.5 (Fornell & Larcker, 1981; Kline, 2016). Therefore, the measurement model demonstrated adequate convergent validity (see Table 5.28).

Lastly, the correlations of the seven latent constructs were all below 0.85 in absolute value (see Table 5.29), suggesting adequate discriminant validity (Cheung & Wang, 2017; Goursand et al., 2013; Kline, 2016; Martinez et al., 2015; Yokokura et al., 2017).

Table 5.28 The Validity and Reliability Measurements for the Seven Constructs

Construct/ Items	Factor Loading	AVE	Composite Reliability	Cronbach's alpha
Service Quality SQ1 SQ2 SQ3 SQ5	0.707*** 0.802*** 0.694*** 0.768***	0.554	0.832	0.827
Spectator Satisfaction ST1 ST2 ST3 ST4	0.822*** 0.879*** 0.867*** 0.908***	0.756	0.925	0.921
Team Image TI1 TI3 TI4 TI5	0.731*** 0.797*** 0.843*** 0.758***	0.614	0.864	0.854
Negative Team Behaviour NTB1 NTB2 NTB3 NTB4 NTB5	0.694*** 0.803*** 0.816*** 0.814*** 0.734***	0.599	0.881	0.867
Team Engagement TE1 TE2 TE3 TE4 TE5 TE6 TE8	0.742*** 0.828*** 0.729*** 0.669*** 0.729*** 0.702*** 0.613***	0.516	0.881	0.878
Player Loyalty PL1 PL2 PL3 PL4	0.922*** 0.915*** 0.896*** 0.891***	0.821	0.948	0.948
Team Loyalty TL1 TL3 TL4 TL5	0.730*** 0.702*** 0.838*** 0.738***	0.568	0.840	0.817

*** Statistically significant at the 0.001 level

Table 5.29 The Correlation Estimates of the Seven Constructs

			Estimate
SQ	<-->	ST	0.839
SQ	<-->	TI	0.42
SQ	<-->	NTB	0.051
SQ	<-->	TE	0.62
SQ	<-->	PL	-0.33
SQ	<-->	TL	0.675
ST	<-->	TI	0.418
ST	<-->	NTB	-0.032
ST	<-->	TE	0.634
ST	<-->	PL	-0.415
ST	<-->	TL	0.74
TI	<-->	NTB	0.003
TI	<-->	TE	0.542
TI	<-->	PL	-0.166
TI	<-->	TL	0.586
NTB	<-->	TE	-0.027
NTB	<-->	PL	0.152
NTB	<-->	TL	-0.055
TE	<-->	PL	-0.385
TE	<-->	TL	0.839
PL	<-->	TL	-0.444

Figure 5.2 shows the modified measurement model. The model contained 32 measurement items, with 528 known elements and 95 parameters to be estimated. The model was over-identified with 433 df. In the model, the constructs of service quality, spectator satisfaction, team image, player loyalty and team loyalty each contained four measurement items. The negative team behaviour construct contained five measurement items, and the team engagement construct contained seven measurement items.

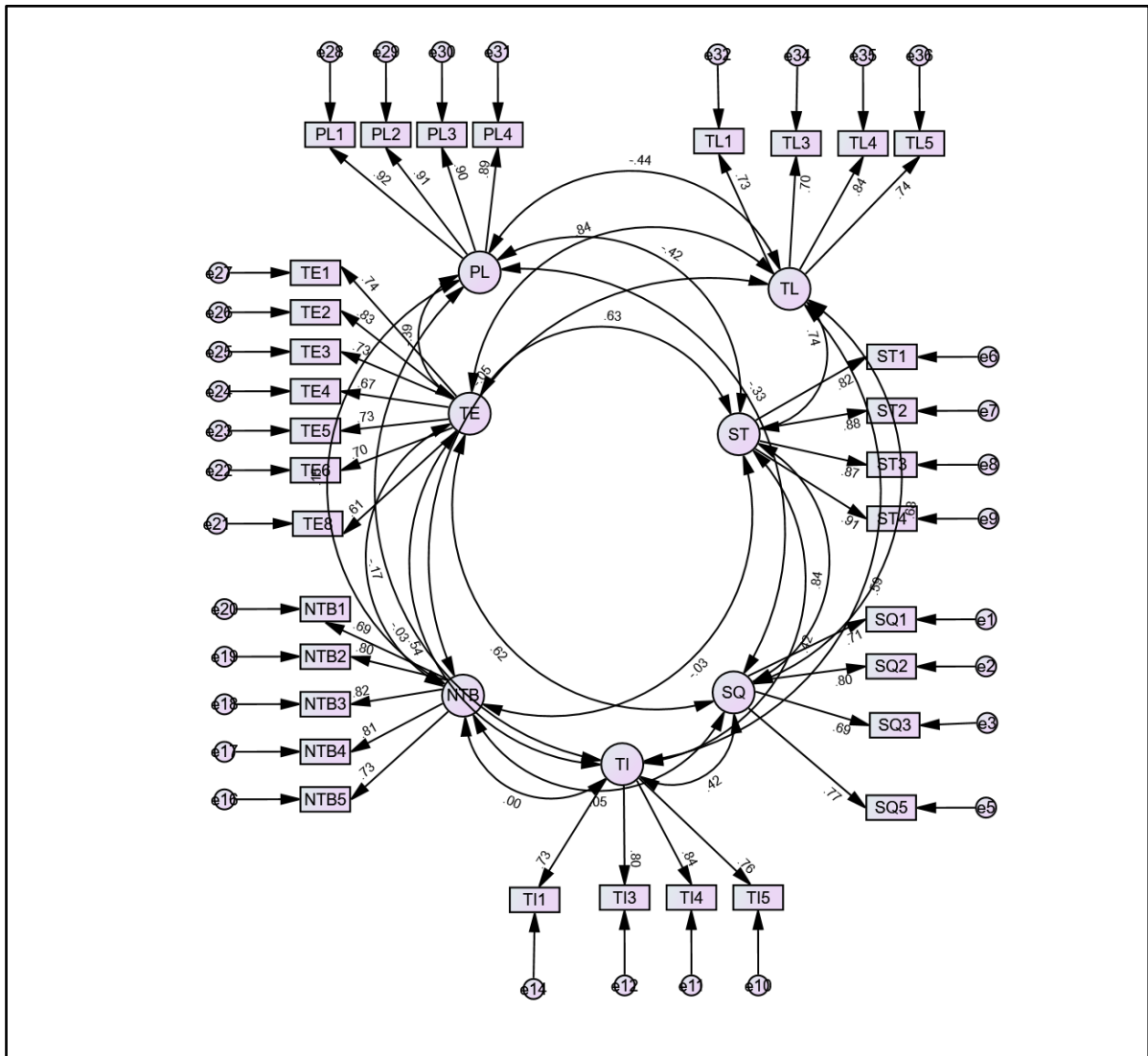


Figure 5.2 The Modified Measurement Model

(SQ = service quality; ST = spectator satisfaction; TI = team image; NTB = negative team behaviour; TE = team engagement; PL = player loyalty; TL = team loyalty)

5.6 Hypothesis Testing

The measurement model was confirmed by CFA. The hypothesised interrelationships, including the mediating effects among the seven constructs, were tested in the structural model (see Figure 5.3). The results of the hypothesis tests are summarised in Table 5.44 (page 107).

The structural model consisted of two exogenous variables (service quality and negative team behaviour) and five endogenous variables (spectator satisfaction, team image, team engagement, player loyalty and team loyalty).

The structural model contained 32 measurement items, with 528 known elements ($32[32+1])/2=528$) and 79 parameters to be estimated (1 correlation coefficient; 39 path coefficients; 39 variances). The model was over-identified with 449 degrees of freedom ($528-79=449$).

The goodness-of-fit indices (see Table 5.30) suggested that the structural model showed an adequate model fit (Fan et al., 1999; Hair et al., 2014; Hu & Bentler, 1998; Kline, 2016; Meyers et al., 2013; Sharma et al., 2005). Therefore, no model modification was required (Kline, 2016; Meyers et al., 2013). The hypotheses discussed in Chapter 3 were subsequently tested.

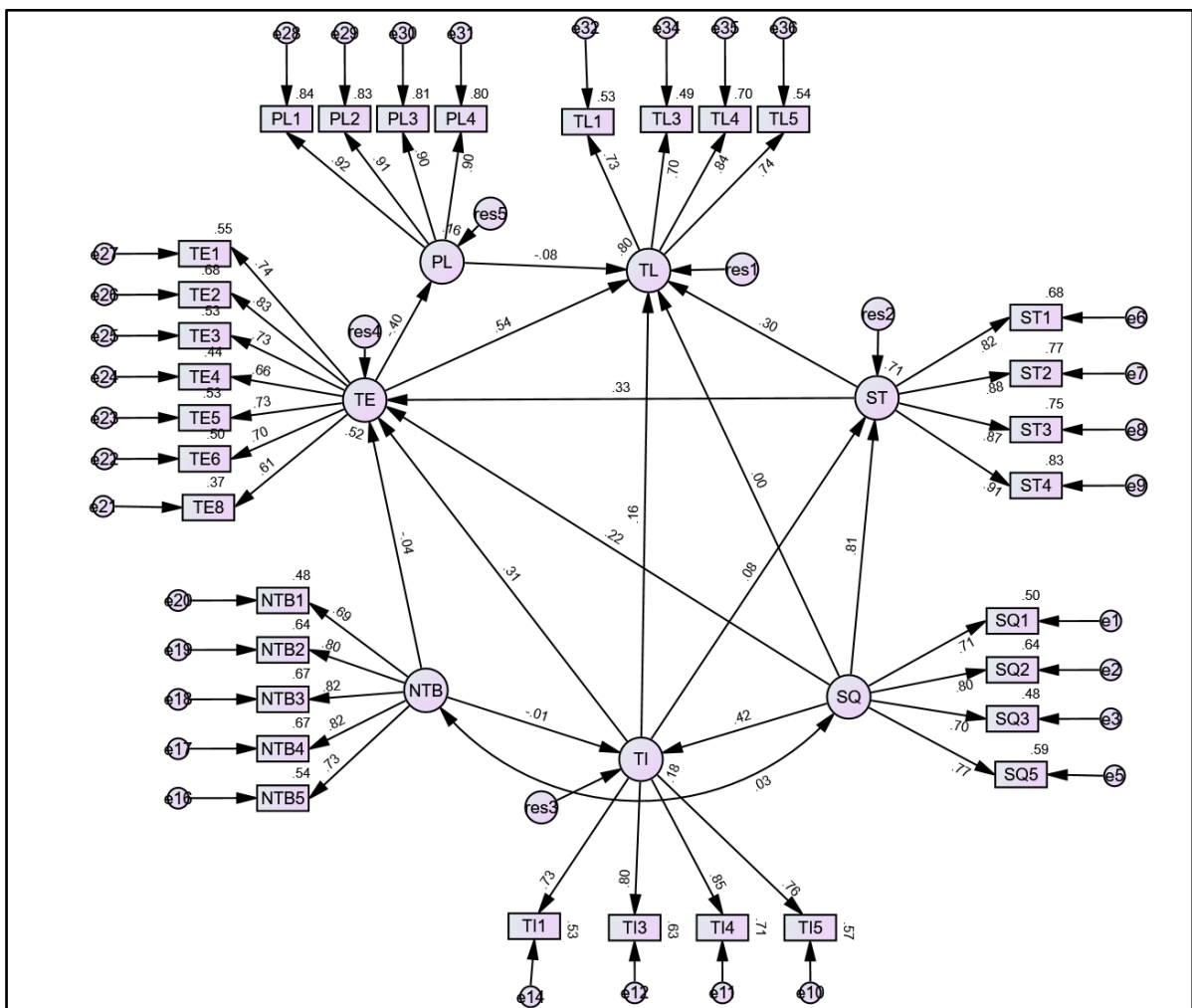


Figure 5.3 The Structural Model

(SQ = service quality; ST = spectator satisfaction; TI = team image; NTB = negative team behaviour; TE = team engagement; PL = player loyalty; TL = team loyalty)

Table 5.30 Goodness -of-fit Indices of the Structural Model

Goodness of Fit Indices	Values
Chi-Square (χ^2)	807.108
Degree of Freedom (df)	449
Normed Chi-square (χ^2/df)	1.798
Goodness of Fit Index (GFI)	0.820
Root Mean Square Error of Approximation (RMSEA)	0.057
Comparative Fit Index (CFI)	0.931
Tucker Lewis Index (TLI)	0.923
Standardized Root Mean Residual (SRMR)	0.062

5.6.1 Hypothesis Tests Relating to Research Objectives One and Two

As discussed in Section 3.3.1, Hypothesis 1- Hypothesis 14 were tested to examine the interrelationships among the seven constructs in the structural model. The hypothesis testing results are summarised in Table 5.31 and discussed in the following paragraphs.

H1: Service quality has a significant positive effect on team image. The test results showed a significant positive path from service quality to team image ($t = 5.317$; $p < 0.01$; $\beta = 0.42$), supporting Hypothesis 1.

H2: Service quality has a significant positive effect on team engagement. Hypothesis 2 was supported, as the test result revealed a significant positive effect between the two constructs ($t = 1.708$; $p < 0.1$; $\beta = 0.224$).

H3: Service quality has a significant positive effect on team loyalty. The path from service quality to team loyalty was found nonsignificant, with the standardised coefficient $\beta = -0.003$ ($t = -0.032$; $p > 0.1$). Hypothesis 3 was not supported.

H4: Service quality has a significant positive effect on spectator satisfaction. The significant positive relationship between the two constructs was supported by the test results ($t = 9.568$; $p < 0.01$; $\beta = 0.806$). Thus, Hypothesis 4 was supported.

H5: Team image has a significant positive effect on team engagement. The test results revealed a significant positive relationship between team image and team engagement ($t = 4.612$; $p < 0.01$; $\beta = 0.310$). Thus, Hypothesis 5 was supported.

H6: Team image has a significant positive effect on team loyalty. Hypothesis 6 was supported, as the test results suggested a significant positive path from team image to team loyalty, with the standardised coefficient $\beta = 0.161$ ($t=2.792$; $p<0.01$).

H7: Team image has a significant positive effect on spectator satisfaction. The effect of team image on spectator satisfaction was found nonsignificant ($t = 1.438$; $p > 0.1$; $\beta = 0.08$). Thus, Hypothesis 7 was not supported.

H8: Negative team behaviour has a significant negative effect on team image. A significant negative relationship between the two constructs was not found in this research ($t = -0.164$; $p > 0.1$; $\beta = -0.01$). Thus, Hypothesis 8 was not supported.

H9: Negative team behaviour has a significant negative effect on team engagement. The test results revealed a nonsignificant path from negative team behaviour to team engagement, with the standardised coefficient $\beta = -0.036$ ($t = -0.67$; $p > 0.1$). Hypothesis 9 was not supported.

H10: Team engagement has a significant positive effect on player loyalty. No positive relationship between the two constructs was found in the present research ($\beta = -0.401$). Therefore, Hypothesis 10 was not supported.

H11: Team engagement has a significant positive effect on team loyalty. A significant positive relationship between the two constructs was supported by the test results ($t = 6.239$; $p < 0.01$; $\beta = 0.535$). Hypothesis 11 was supported.

H12: Player loyalty has a significant positive effect on team loyalty. Hypothesis 12 was not supported as no positive effect of player loyalty was found on team loyalty ($\beta = -0.083$).

H13: Spectator satisfaction has a significant positive effect on team engagement. The test results suggested a significant positive relationship between the two constructs ($t = 2.582$; $p < 0.01$; $\beta = 0.326$). Thus, Hypothesis 13 was supported.

H14: Spectator satisfaction has a significant positive effect on team loyalty. A significant positive path from spectator satisfaction to team loyalty was supported by the test results ($t = 2.836$; $p < 0.01$; $\beta = 0.299$). Thus, Hypothesis 14 was supported.

Table 5.31 Standardized Causal Effect of the Structural Equation Model and Hypothesis Testing Results

Outcome(s)	Determinant(s)	Causal Effects		Hypotheses	Assessment
		Direct Causal Path	Critical Ratio		
Team Loyalty	Spectator Satisfaction	0.299	2.836***	H14	Supported
	Player Loyalty	-0.083	-1.722	H12	Not Supported
	Team Engagement	0.535	6.239***	H11	Supported
	Team Image	0.161	2.792***	H6	Supported
	Service Quality	-0.003	-0.032	H3	Not Supported
Spectator Satisfaction	Service Quality	0.806	9.568***	H4	Supported
	Team Image	0.08	1.438	H7	Not Supported
Team Engagement	Spectator Satisfaction	0.326	2.582***	H13	Supported
	Negative Team Behaviour	-0.036	-0.67	H9	Not Supported
	Team Image	0.310	4.612***	H5	Supported
	Service Quality	0.224	1.708*	H2	Supported
Team Image	Service Quality	0.420	5.317***	H1	Supported
	Negative Team Behaviour	-0.011	-0.164	H8	Not Supported
Player Loyalty	Team Engagement	-0.401	-5.766	H10	Not Supported

*** Statistically significant at the 0.01 level ($t > 2.576$)

** Statistically significant at the 0.05 level ($t > 1.960$)

* Statistically significant at the 0.1 level ($t > 1.645$)

5.6.2 Hypothesis Tests Relating to Research Objective Three

As discussed in Section 3.3.2, six hypotheses (Hypothesis 15 - Hypothesis 20) relating to Research Objective Three were proposed in order to examine the potential mediating effects among related constructs. Team image, spectator satisfaction and team engagement were proposed to mediate the positive effect of service quality on team loyalty (Hypothesis 15, Hypothesis 16 and Hypothesis 17, respectively). Team engagement was proposed to mediate the positive relationship between spectator satisfaction and team loyalty (Hypothesis 18). Team engagement and spectator satisfaction were proposed to mediate the effect of team image on team loyalty (Hypothesis 19 and Hypothesis 20, respectively). The mediation tests were conducted using Baron and Kenny's (1986) two-step method (see Section 4.7.1.2.1).

5.6.2.1 The Mediating Effect of Team Image on the Positive Relationship between Service Quality and Team Loyalty

Testing Hypothesis 15 began with assessing the direct effect of service quality on team loyalty. The test results showed a significant positive path from service quality to team loyalty (see Table 5.32 and Figure 5.4).

Table 5.32 Standardized Direct Effect of Service Quality on Team Loyalty

Outcome	Determinant	Causal Effects		Result
		Direct Causal Path	Critical Ratio	
Team Loyalty	Service Quality	0.675	7.689***	Significant

*** Statistically significant at the 0.001 level

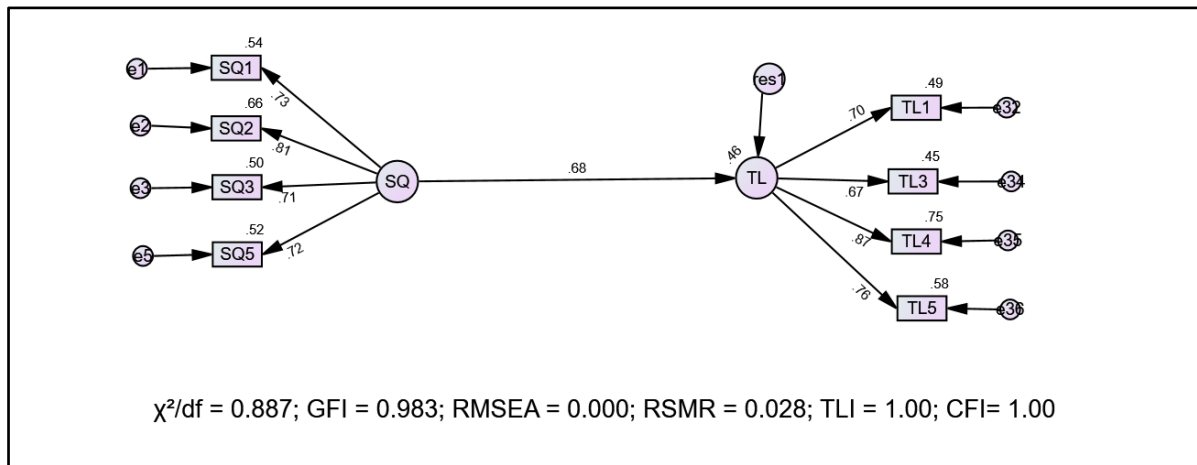


Figure 5.4 The Direct Effect of Service Quality on Team Loyalty

The second step involved examining the causal relationship between service quality and team loyalty with team image included in the model as a mediator. The test results revealed that the direct effect of service quality on team loyalty was reduced from 0.675 to 0.526 but remained statistically significant at the 0.001 level (see Table 5.33/Figure 5.5). Thus, team image exerted a partial mediating effect on the positive relationship between service quality and team loyalty, supporting Hypothesis 15.

Table 5.33 Standardized Mediating Effect of Team Image on the Positive Relationship between Service Quality and Team Loyalty

Outcome	Determinant	Causal Effects		Result
		Direct Causal Path	Critical Ratio	
Team Image	Service Quality	0.412	5.263***	Significant
Team Loyalty	Team Image	0.365	5.149***	Significant
Team Loyalty	Service Quality	0.526	6.606***	Significant

*** Statistically significant at the 0.001 level

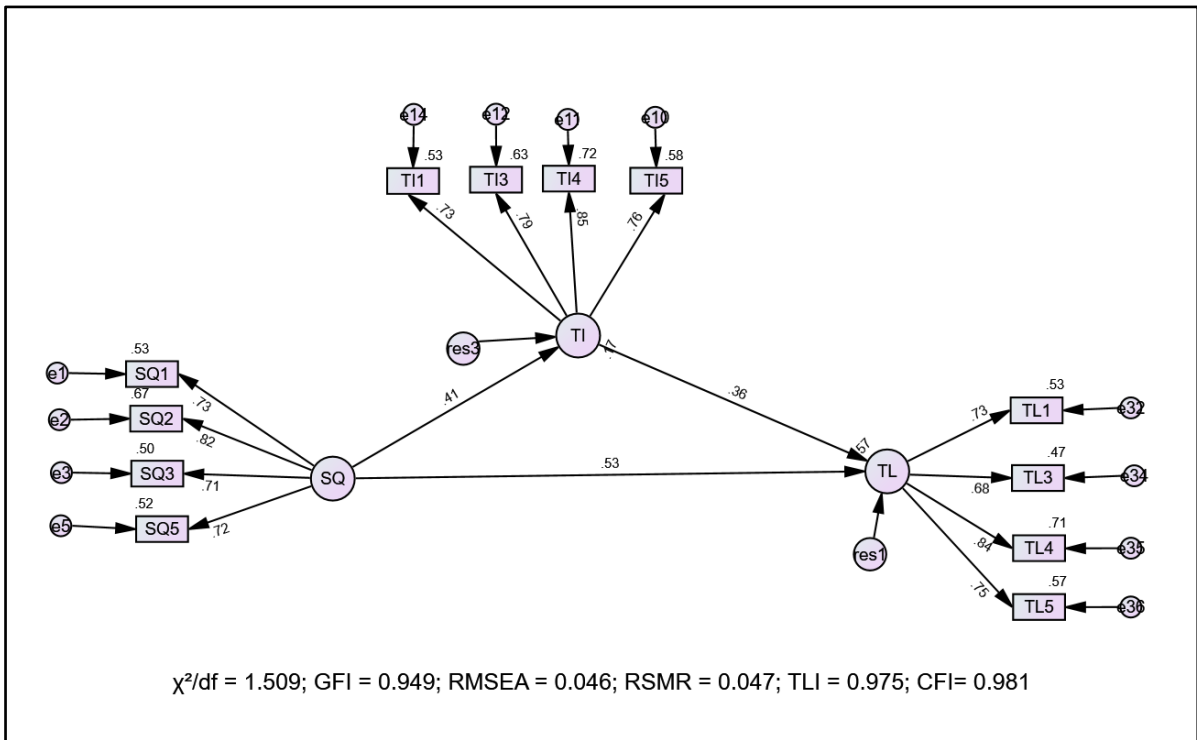


Figure 5.5 The Mediating Role of Team Image on the Positive Relationship between Service Quality and Team Loyalty

5.6.2.2 The Mediating Effect of Spectator Satisfaction on the Positive Relationship between Service Quality and Team Loyalty

Hypothesis 16 proposed that spectator satisfaction mediated the positive relationship between service quality and team loyalty. The direct effect of service quality on team loyalty is shown in Table 5.32 and Figure 5.4. With spectator satisfaction included in the model as a mediator, the direct effect of service quality on team loyalty was reduced from 0.675 to 0.184 and no longer statistically significant ($p > 0.1$) (see Table 5.34/Figure 5.6). The test results indicated that spectator satisfaction fully mediated the effect of service quality on team loyalty, supporting Hypothesis 16.

Table 5.34 Standardized Mediating Effect of Spectator Satisfaction on the Relationship between Service Quality and Team Loyalty

Outcome	Determinant	Causal Effects		Result
		Direct Causal Path	Critical Ratio	
Spectator Satisfaction	Service Quality	0.838	10.301***	Significant
Team Loyalty	Spectator Satisfaction	0.584	4.435***	Significant
Team Loyalty	Service Quality	0.184	1.429	Not Significant

*** Statistically significant at the 0.001 level

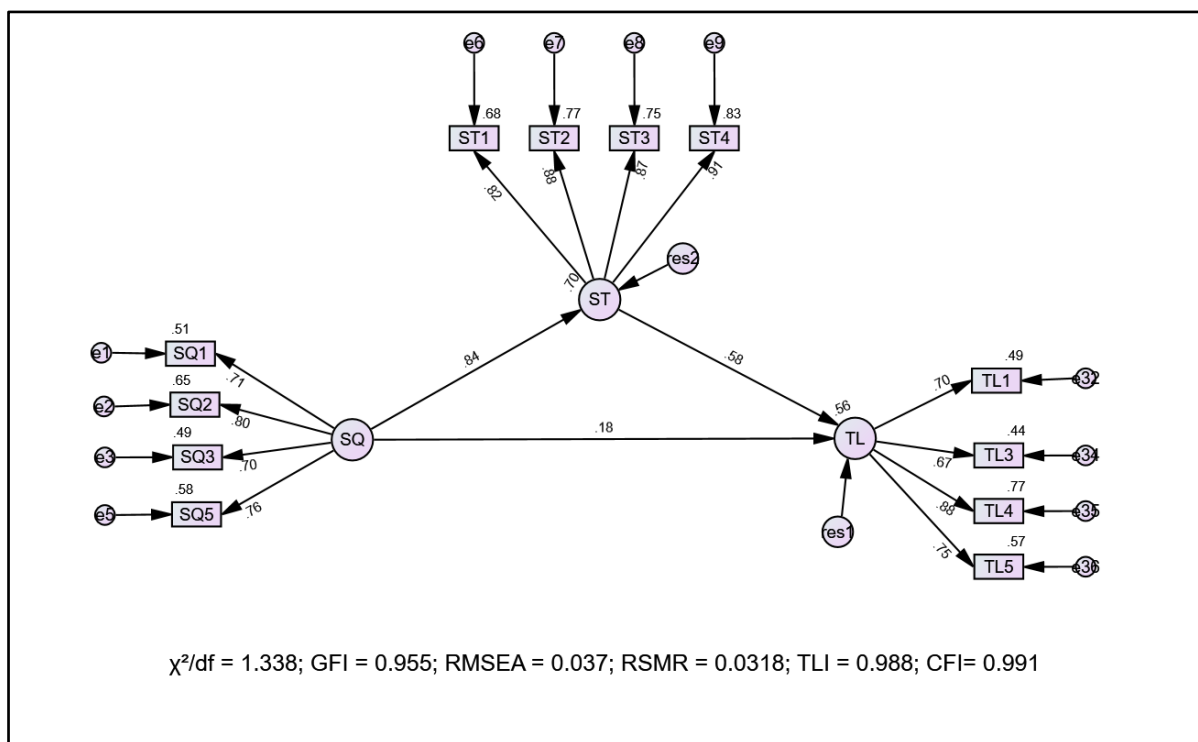


Figure 5.6 The Mediating Role of Spectator Satisfaction on the Positive Relationship of Service Quality and Team Loyalty

5.6.2.3 The Mediating Effect of Team Engagement on the Positive Relationship between Service Quality and Team Loyalty

Hypothesis 17 proposed that team engagement mediated the effect of service quality on team loyalty. The direct effect of service quality on team loyalty is shown in Table 5.32 and Figure 5.4. With team engagement included in the model as a mediator, the direct effect of service quality on team loyalty was reduced from 0.675 to 0.258 but still statistically significant at the 0.001 level (see Table 5.35/Figure 5.7). The test results suggested a partial mediating role of team engagement on

the positive relationship between service quality and team loyalty. Thus, Hypothesis 17 was supported.

Table 5.35 Standardized Mediating Effect of Team Engagement on the Positive Relationship between Service Quality and Team Loyalty

Outcome	Determinant	Causal Effects		Result
		Direct Causal Path	Critical Ratio	
Team Engagement	Service Quality	0.615	7.485***	Significant
Team Loyalty	Team Engagement	0.681	7.751***	Significant
Team Loyalty	Service Quality	0.258	3.603***	Significant

*** Statistically significant at the 0.001 level

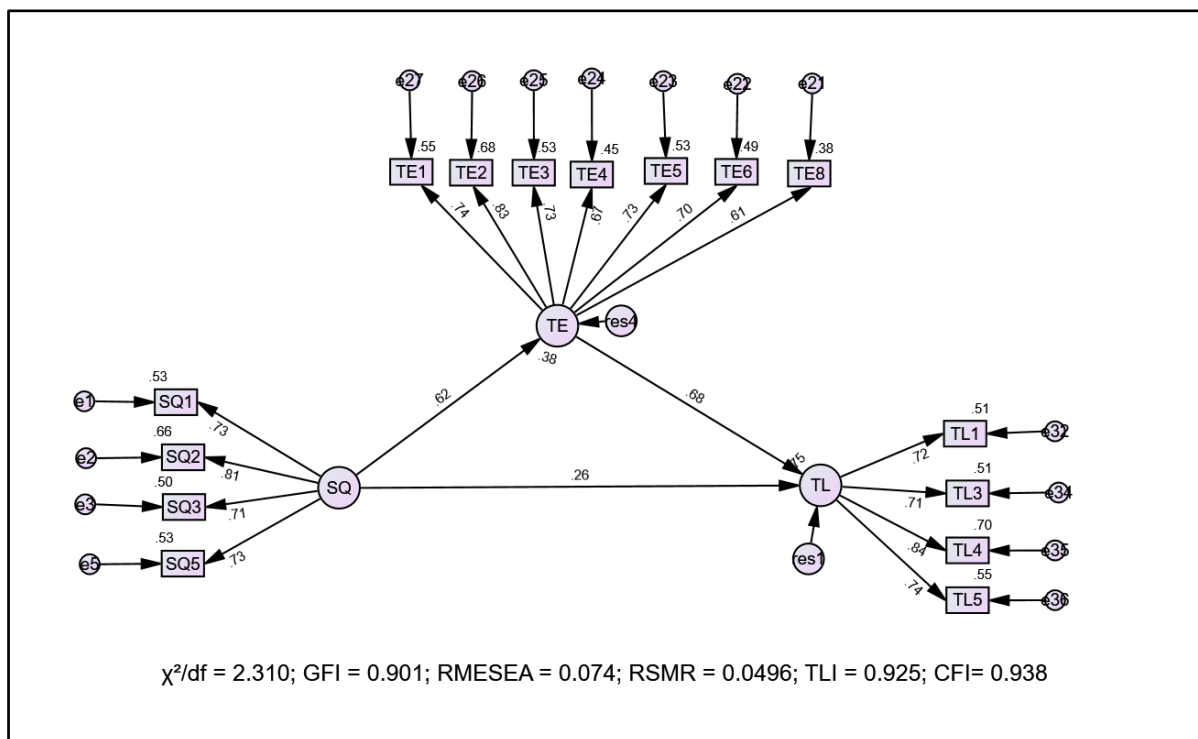


Figure 5.7 The Mediating Role of Team Engagement on the Effect of Service Quality on Team loyalty

5.6.2.4 The Mediating Effect of Team Engagement on the Positive Relationship between Spectator Satisfaction and Team Loyalty

Hypothesis 18 proposed that team engagement mediated the effect of spectator satisfaction on team loyalty. The test results showed that spectator satisfaction had a significant and positive direct effect on team loyalty, statistically significant at the 0.001 level (see Table 5.36/Figure 5.8).

Table 5.36 Standardized Causal Effect of Direct Effect of Spectator Satisfaction on Team Loyalty

Outcome	Determinant	Causal Effects		Result
		Direct Causal Path	Critical Ratio	
Team Loyalty	Spectator Satisfaction	0.737	9.136***	Significant

*** Statistically significant at the 0.001 level

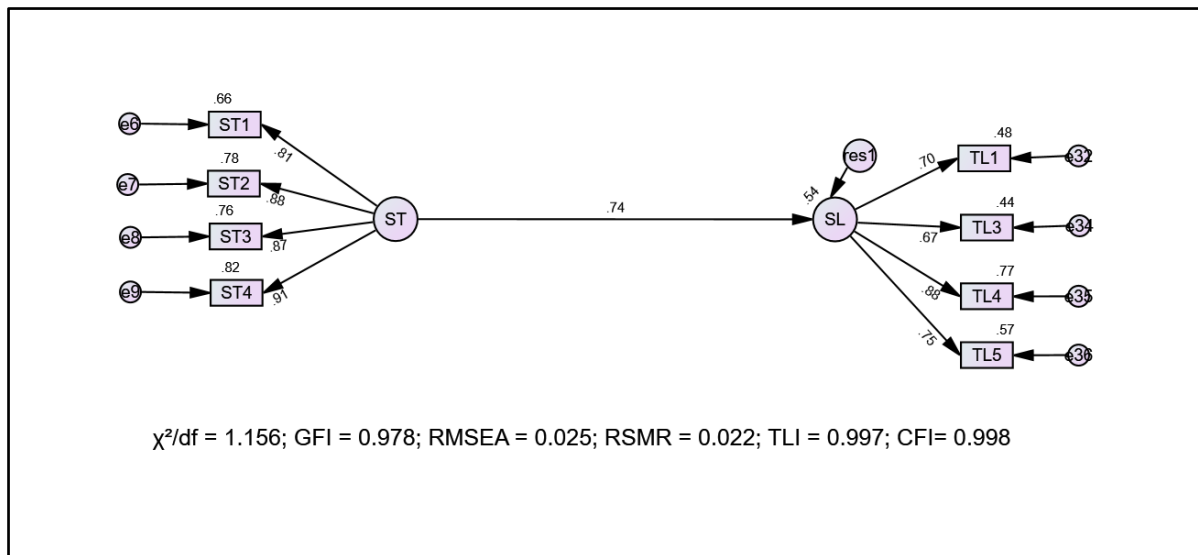


Figure 5.8 The Direct Effect of Spectator Satisfaction on Team Loyalty

When team engagement was added to the model as a mediator, the direct effect of spectator satisfaction on team loyalty was reduced from 0.737 to 0.348 but still statistically significant at the 0.001 level (see Table 5.37/Figure 5.9). The test results showed a partial mediating effect of team engagement on the positive relationship between spectator satisfaction and team loyalty.

Hypothesis 18 was supported.

Table 5.37 Standardized Mediating Effect of Team Engagement on the Positive Relationship between Spectator Satisfaction and Team Loyalty

Outcome	Determinant	Causal Effects		Result
		Direct Causal Path	Critical Ratio	
Team Engagement	Spectator Satisfaction	0.634	8.587***	Significant
Team Loyalty	Team Engagement	0.617	7.555***	Significant
Team Loyalty	Spectator Satisfaction	0.348	5.180***	Significant

*** Statistically significant at the 0.001 level

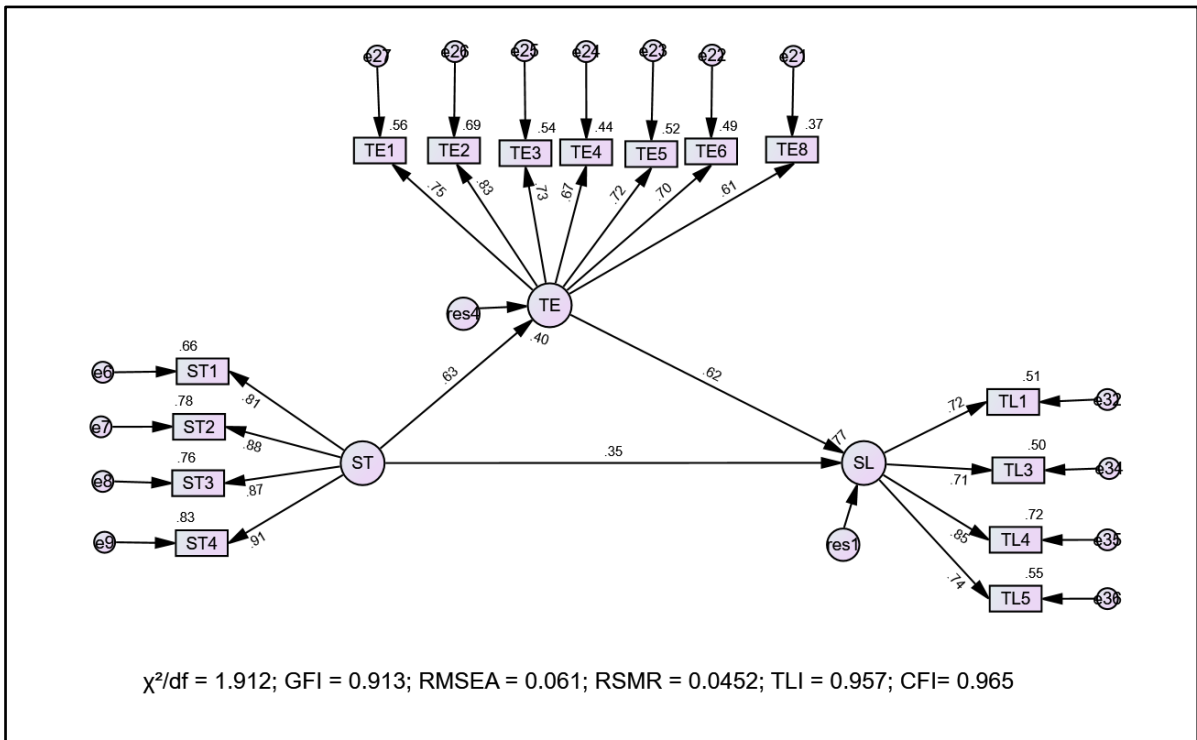


Figure 5.9 The Mediating Role of Team Engagement on the Effect of Spectator Satisfaction on Team Loyalty

5.6.2.5 The Mediating Effect of Team Engagement on the Positive Relationship between Team Image and Team Loyalty

Hypothesis 19 proposed that team engagement mediated the effect of team image on team loyalty. The hypothesis testing began with assessing the direct effect of team image on team loyalty. The test results revealed that there was a significant positive relationship between team image and team loyalty at the 0.001 level (see Table 5.38/Figure 5.10).

Table 5.38 Standardized Causal Effect of Direct Effect of Team Image on Team Loyalty

Outcome	Determinant	Causal Effects		Result
		Direct Causal Path	Critical Ratio	
Team Loyalty	Team Image	0.587	7.268***	Significant

*** Statistically significant at the 0.001 level

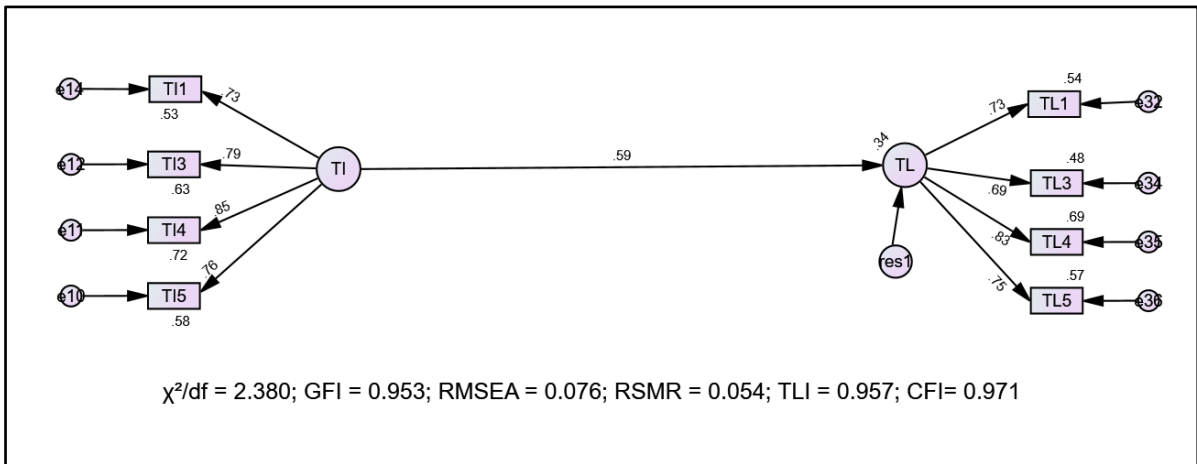


Figure 5.10 The Direct Effect of Team Image on Team Loyalty

The relationship between team image and team loyalty was further assessed by adding team engagement in the model as a mediator. As shown in Table 5.39 and Figure 5.10, the direct effect of team image on team loyalty was reduced from 0.587 to 0.193 but remained statistically significant at the 0.01 level. Therefore, team engagement exerted a partial mediating effect on the positive relationship between team image and team loyalty, supporting Hypothesis 19.

Table 5.39 Standardized Mediating Effect of Team Engagement on the Positive Relationship between Team Image and Team Loyalty

Outcome	Determinant	Causal Effects		Result
		Direct Causal Path	Critical Ratio	
Team Engagement	Team Image	0.543	7.003***	Significant
Team Loyalty	Team Engagement	0.742	8.648***	Significant
Team Loyalty	Team Image	0.193	3.036**	Significant

*** Statistically significant at the 0.001 level

** Statistically significant at the 0.01 level

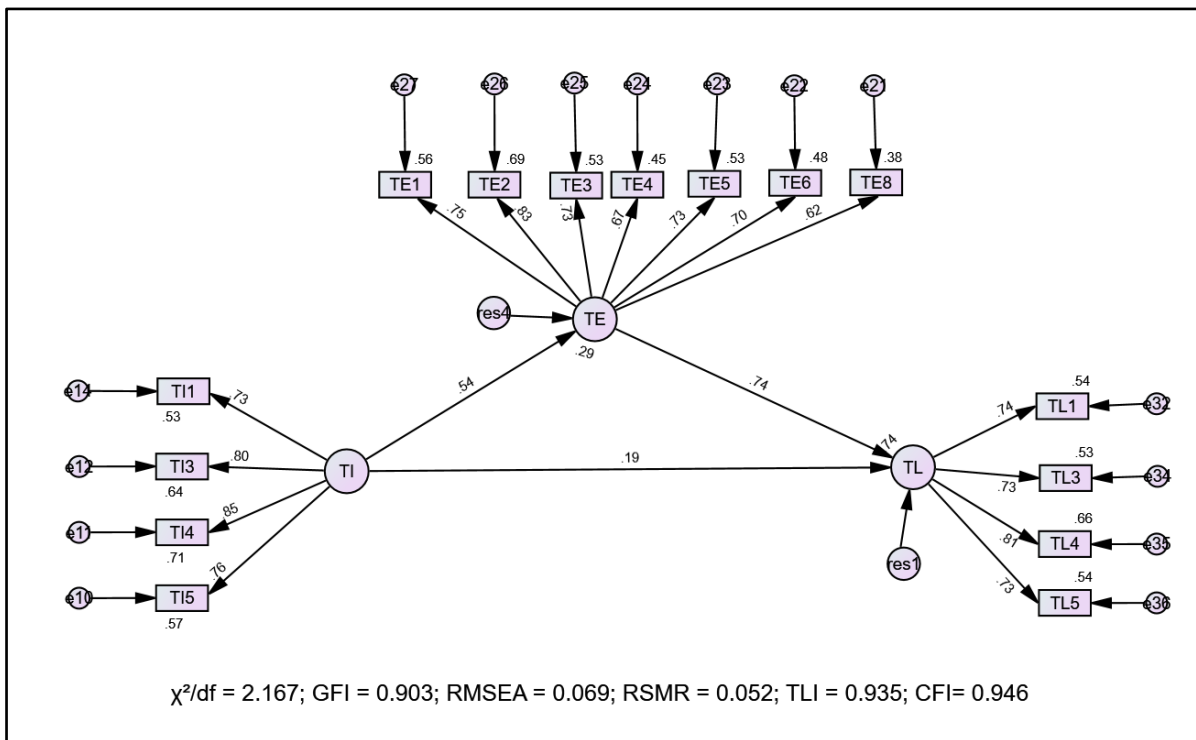


Figure 5.11 The Mediating Role of Team Engagement on the Effect of Team Image on Team Loyalty

5.6.2.6 The Mediating Effect of Spectator Satisfaction on the Positive Relationship between Team Image and Team Loyalty

Hypothesis 20 proposed that spectator satisfaction mediated the effect of team image on team loyalty. The direct effect of team image on team loyalty is shown in Table 5.38 and Figure 5.10. With spectator satisfaction included in the model as a mediator, the direct effect of team image on team loyalty was reduced from 0.587 to 0.327 but remained statistically significant at the 0.001 level (see Table 5.40/Figure 5.12). The test results suggested that spectator satisfaction partially mediated the effect of team image on team loyalty. Thus, Hypothesis 20 was supported.

Table 5.40 Standardized Mediating Effect of Spectator Satisfaction on the Positive Relationship between Team Image and Team Loyalty

Outcome	Determinant	Causal Effects		Result
		Direct Causal Path	Critical Ratio	
Spectator Satisfaction	Team Image	0.417	5.729***	Significant
Team Loyalty	Spectator Satisfaction	0.603	8.261***	Significant
Team Loyalty	Team Image	0.327	5.057***	Significant

*** Statistically significant at the 0.001 level

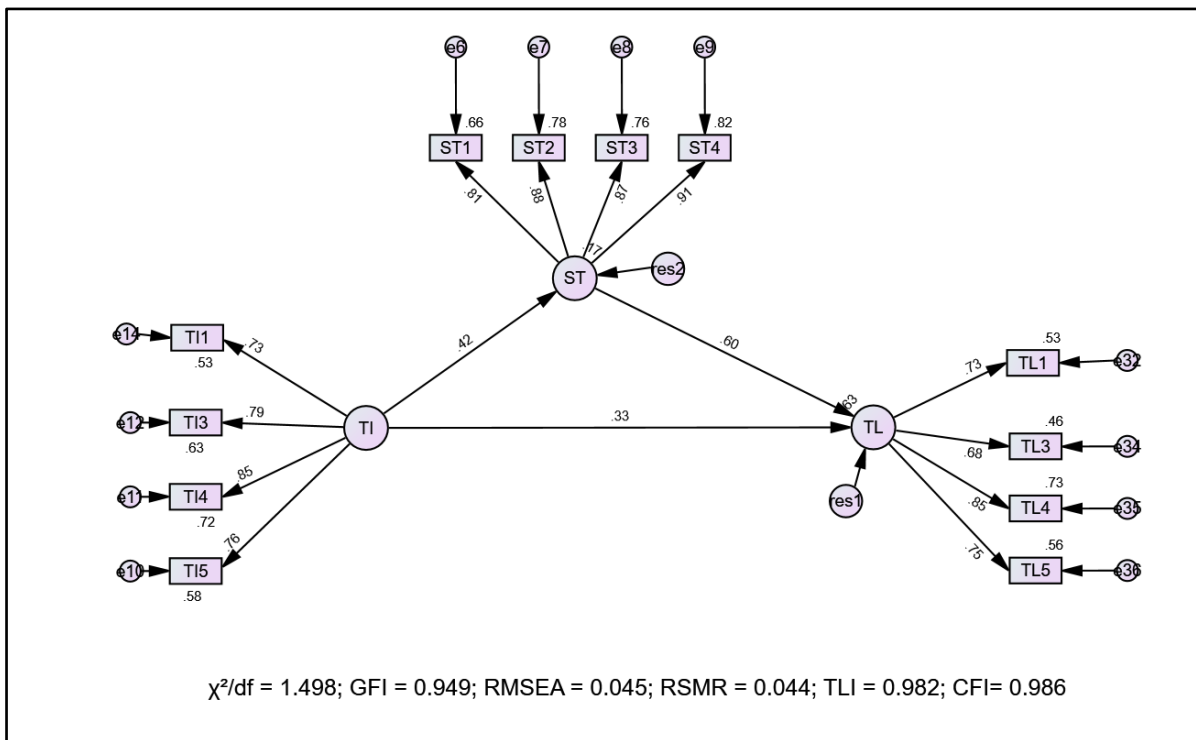


Figure 5.12 The Mediating Role of Spectator Satisfaction on the Effect of Team Image on Team Loyalty

5.6.3 Hypothesis Tests Relating to Relating to Research Objective Four

As discussed in Section 3.3.3, two hypotheses (Hypothesis 20 and Hypothesis 21) relating to Research Objective Four were proposed in order to examine whether NBA spectators' perceptions of related higher-order marketing constructs vary across age and gender groups. Age differences were assessed using the MGA (see Section 4.7.1.2.2). Gender differences were examined using a one-way ANOVA (see Section 4.7.1.2.3).

5.6.3.1 The Multi-group Analysis for Age Groups

Hypothesis 21 posited that NBA spectators' perceptions would vary across two age groups (Group 1: aged under 36; Group 2: aged 36 or over). There were 135 respondents for Group 1 and 108 respondents for Group 2. The age group differences were assessed by conducting an MGA based on Jöreskog's (1971) two-phase approach.

The MGA began by comparing the unconstrained model and the constrained model to determine whether there is an overall difference in path coefficients across two age groups (Jöreskog, 1971; Meyers et al., 2013). The goodness-of-fit indices suggested that both the unconstrained model and the constrained model showed adequate model fit (Hair et al., 2014). The goodness-of-fit indices and model differences of the unconstrained and constrained models are displayed in Table 5.41.

Table 5.41 The goodness-of-fit indices and model differences of the constrained and unconstrained models

Model Fit Indices	Unconstrained Model	Constrained Model	Model Differences	P Value
Chi-square	1425.776	1480.467	54.691	0.000
Degree of Freedom	898	912	14	
χ^2/df	1.588	1.623		
CFI	0.903	0.900		
RMSEA	0.049	0.051		

To determine if the two models are significantly different, a χ^2 difference test was conducted. The χ^2 value of the unconstrained model was 1425.776, with 898 df. The χ^2 value of the constrained model was 1480.467, with 912 df. Subtracting the χ^2 value of the unconstrained model from the χ^2 value of the constrained model yielded the $\Delta\chi^2 (14) = 54.691$. According to the critical ratio, the $\Delta\chi^2 (14) = 54.691$ was statistically significant ($p=0.000$). The χ^2 difference test results suggested that there were differences in path coefficients across two age groups (Meyers et al., 2013). To locate where those differences lie, each pair of path coefficients were examined using Z scores and critical ratios (Hair et al., 2014; Meyers et al., 2013). The multigroup comparison test results are shown in Table 5.42.

Table 5.42 The Multi-group Comparison Test

Path			Aged under 36 (Group 1)		Aged 36 or over (Group 2)		Z-score
			Estimate	C.R.	Estimate	C.R.	
TI	<---	SQ	0.328	2.935***	0.497	4.559***	2.596***
TI	<---	NTB	0.063	0.629	-0.071	-0.757	-0.983
ST	<---	SQ	0.618	5.696***	0.942	7.983***	3.922***
ST	<---	TI	0.264	2.887***	-0.061	-0.9	-2.938***
TE	<---	ST	0.309	2.544	0.326	1.194	-0.581
TE	<---	NTB	0.002	0.028	-0.132	-1.553	-1.028
TE	<---	TI	0.444	4.26***	0.199	1.943**	-3.026***
TE	<---	SQ	0.228	2.006	0.24	0.812	-0.037
PL	<---	TE	-0.381	-4.098	-0.374	-3.682	-0.391
TL	<---	ST	0.301	2.84	0.571	2.476	0.118
TL	<---	PL	-0.042	-0.714	-0.034	-0.498	0.179
TL	<---	TE	0.638	4.909	0.443	3.816	-1.262
TL	<---	TI	-0.054	-0.6	0.452	4.558***	2.584***
TL	<---	SQ	0.066	0.683	-0.306	-1.249	-1.42

*** p-value < 0.01; ** p-value < 0.05

The test results suggested that group differences were observed in five individual paths: service quality to team image ($z = 2.596$, $p < 0.01$); service quality to spectator satisfaction ($z = 3.922$, $p <$

0.01); team image to spectator satisfaction ($z = -2.938, p < 0.01$); team image to team engagement ($z = -3.026, p < 0.01$); and team image to team loyalty ($z = 2.584, p < 0.01$). Thus, Hypothesis 21 was supported. The group differences for the five paths are discussed here.

Service Quality -> Team Image

The path coefficients from service quality to team image for Group 1 and Group 2 were 0.328 and 0.497, respectively. The test results suggested that respondents aged 36 years or over who perceived a high level of service quality were more likely to form a positive image toward the NBA team compared to respondents aged under 36 years.

Service Quality -> Spectator Satisfaction

The path coefficients from service quality to spectator satisfaction for Group 1 and Group 2 were 0.618 and 0.942, respectively. Service quality had a greater effect on spectator satisfaction among respondents aged 36 years or over than among respondents aged under 36 years.

Team Image -> Spectator Satisfaction

The path coefficients from team image to spectator satisfaction for Group 1 and Group 2 were 0.264 and -0.061, respectively. The test results indicated that spectators aged under 36 who formed a positive image towards their favourite NBA team were likely to feel satisfied with their game-attending experiences. However, no significant positive relationship between team image and spectator satisfaction was found among spectators aged 36 or over.

Team Image -> Team Engagement

A significant positive relationship between team image and team engagement was found in both Group 1 ($\beta = 0.444$) and Group 2 ($\beta = 0.199$). However, team image exerted a greater effect on team engagement among spectators aged under 36 years than among spectators aged 36 years or over. Compared to older spectators, spectators aged under 36 years were more likely to engage with their favourite NBA team if they perceived a positive image of the team.

Team Image -> Team Loyalty

The path coefficients from team image to team loyalty for Group 1 and Group 2 were -0.054 and 0.452, respectively. The test results revealed that the positive relationship between team image and team loyalty was significant for spectators aged 36 or above but not for spectators aged under 36.

5.6.3.2 1 The ANOVA Test of Two Gender Groups

Hypothesis 22 proposed that NBA spectators' perceptions of team loyalty would vary between males and females. A one-way ANOVA was conducted to assess whether there are statistically significant differences across genders. The mean scores for team loyalty were higher among female spectators than among male spectators (see Table 5.43). There were statistically significant differences ($p < 0.05$) between group means as suggested by the one-way ANOVA test results (see Table 5.44).

Table 5.43 The Mean Scores Results

Code	Group	N	Descriptives						
			Mean	Std. Deviation	Std. Error	95% Confidence		Minimum	Maximum
						Lower Bound	Upper Bound		
TL1	Male	188	6.28	0.931	0.068	6.15	6.42	3	7
	Female	55	6.69	0.505	0.068	6.55	6.83	5	7
	Total	243	6.37	0.869	0.056	6.26	6.48	3	7
TL2	Male	188	6.11	1.025	0.075	5.96	6.26	3	7
	Female	55	6.55	0.765	0.103	6.34	6.75	4	7
	Total	243	6.21	0.988	0.063	6.09	6.33	3	7
TL3	Male	188	6.06	1.105	0.081	5.9	6.22	2	7
	Female	55	6.49	0.979	0.132	6.23	6.76	3	7
	Total	243	6.16	1.091	0.07	6.02	6.29	2	7
TL4	Male	188	6.53	0.734	0.054	6.43	6.64	4	7
	Female	55	6.8	0.487	0.066	6.67	6.93	5	7
	Total	243	6.59	0.694	0.045	6.5	6.68	4	7
TL5	Male	188	6.54	0.776	0.057	6.43	6.65	4	7
	Female	55	6.87	0.388	0.052	6.77	6.98	5	7
	Total	243	6.61	0.721	0.046	6.52	6.7	4	7

Table 5.44 The One-way ANOVA Test Results

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
TL1	Between Groups	7.118	1	7.118	9.757	0.002
	Within Groups	175.804	241	0.729		
	Total	182.922	242			
TL2	Between Groups	8.006	1	8.006	8.451	0.004
	Within Groups	228.291	241	0.947		
	Total	236.296	242			
TL3	Between Groups	7.956	1	7.956	6.845	0.009
	Within Groups	280.102	241	1.162		
	Total	288.058	242			
TL4	Between Groups	3.058	1	3.058	6.487	0.011
	Within Groups	113.609	241	0.471		
	Total	116.667	242			
TL5	Between Groups	4.789	1	4.789	9.551	0.002
	Within Groups	120.848	241	0.501		
	Total	125.638	242			

5.6.4 Summary of Hypothesis Testing Results

The results of the hypothesis tests are summarised in Table 5.45.

Table 5.45 Summary of Hypothesis Testing Results

Hypothesis	Result
H1: Service quality has a significant positive effect on team image.	Supported
H2: Service quality has a significant positive effect on team engagement.	Supported
H3: Service quality has a significant positive effect on team loyalty.	Not Supported
H4: Service quality has a significant positive effect on spectator satisfaction.	Supported
H5: Team image has a significant positive effect on team engagement.	Supported
H6: Team image has a significant positive effect on team loyalty.	Supported
H7: Team image has a significant positive effect on spectator satisfaction.	Not Supported
H8: Negative team behaviour has a significant negative effect on team image.	Not Supported
H9: Negative team behaviour has a significant negative effect on team engagement.	Not Supported
H10: Team engagement has a significant positive effect on player loyalty.	Not Supported
H11: Team engagement has a significant positive effect on team loyalty.	Supported
H12: Player loyalty has a significant positive effect on team loyalty.	Not Supported
H13: Spectator satisfaction has a significant positive effect on team engagement.	Supported
H14: Spectator satisfaction has a significant positive effect on team loyalty.	Supported
H15: Team image mediates the positive relationship between service quality and team loyalty.	Supported
H16: Spectator satisfaction mediates the positive relationship between service quality and team loyalty.	Supported
H17: Team engagement mediates the positive relationship between service quality and team loyalty.	Supported
H18: Team engagement mediates the positive relationship between spectator satisfaction and team loyalty.	Supported
H19: Team engagement mediates the positive relationship between team image and team loyalty.	Supported
H20: Spectator satisfaction mediates the positive relationship between team image on team loyalty.	Supported
H21: NBA spectators' perceptions of the interrelationships among service quality, spectator satisfaction, team image, negative team behaviour, team engagement, player loyalty and team loyalty vary across two age groups (Group 1: aged under 36; Group 2: aged 36 or over).	Supported
H22: NBA spectators' perceptions of team loyalty vary between males and females.	Supported

Chapter 6

Discussion and Conclusions

6.1 Introduction

The antecedents of team loyalty (Section 6.2), the interrelationships among the seven targeted higher-order marketing constructs (Section 6.3), gender and age differences (Section 6.4), theoretical contributions (Section 6.5), managerial implications (Section 6.6), impacts of the COVID-19 pandemic (Section 6.7), limitations of the results of this study (Section 6.8), and directions for future research (Section 6.9) are discussed in this chapter.

6.2 The Antecedents of Team Loyalty

The interrelationships between team loyalty and its potential antecedents were empirically examined. The test results revealed that 80% of the variance of team loyalty was explained by team engagement, spectator satisfaction, team image, service quality, negative team behaviour and player loyalty. Hair et al. (2014) note that a solution that accounts for 60% of the total variance is considered satisfactory in social sciences. Eighty percent of the explained variance was a relatively high figure, indicating a strong association between team loyalty and its predictors (Hair et al., 2014; Rosenthal, 2012). The test results revealed that team engagement, spectator satisfaction and team image were the three constructs that exerted significant and direct positive effects on team loyalty. Service quality was found to positively affect team loyalty only indirectly through team image, spectator satisfaction and team engagement. Player loyalty did not show a significant positive effect on team loyalty. The test results are interpreted and discussed as follows:

6.2.1 Team Engagement

Team engagement showed a significant direct positive effect on team loyalty. The standardised coefficient path from team engagement to team loyalty was $\beta = 0.535$, $p < 0.01$, supporting Hypothesis 11. The test results indicated that a higher level of team engagement may lead to a higher level of loyalty towards the NBA team in fans. Team engagement behaviours specified in the present research included: following the favourite NBA team on social media platform(s); sharing team-related information with other people; interacting with other fans; and participating in team-related events or activities. These team engagement behaviours positively affected fans' intentions to attend future games of the NBA team, making recommendations, and spreading positive word-of-mouth. The positive relationship between team engagement and team loyalty is consistent with the findings from other research on the sports industry (Pradhan et al., 2020; Yoshida et al., 2014).

Given the positive influence team engagement has on team loyalty, NBA teams should focus on developing strategies to engage with their fanbase. Teams could use the team engagement scale in this research as an indicator to plan and shape their fan engagement strategies. For example, teams should consider innovating and expanding their use of multiple online platforms to encourage active interaction. Constant posts about team-related information such as archive footage, past games, and interviews may be required. Creating content such as podcasts, quiz competitions and team apps where fans can interact with each other may also help promote team-fan engagement. In addition to online content, NBA teams may also engage with their fans through offline events and activities. For example, creating more community events and outreach initiatives, such as fan festivals and parade appearances, may also help foster fan engagement and interaction.

6.2.2 Spectator Satisfaction

Spectator satisfaction also had a significant, positive direct effect on team loyalty. The standardised coefficient path from spectator satisfaction to team loyalty was $\beta = 0.299$, $p < 0.01$, supporting Hypothesis 14. The test results suggested that NBA spectators who were satisfied with their game-attendance experiences tended to attend future games, spread positive word-of-mouth, and recommend their favourite teams to other people. Therefore, a satisfying accumulative game-attendance experience may lead to fans' loyalty towards the NBA team. The positive relationship between spectator satisfaction and team loyalty is consistent with the research findings from several studies on the sports industry (Clemes et al., 2011; Koo et al., 2008; Rohman, 2019; Theodorakis et al., 2013; Yun et al., 2020).

In addition to the direct causal effect, spectator satisfaction also affected team loyalty indirectly through team engagement. The test results pertaining to Hypothesis 18 revealed that team engagement partially mediated the positive effect of spectator satisfaction on team loyalty. The findings suggested that when spectator satisfaction was the only criterion used to decide NBA fans' behavioural intentions, an overall satisfying game-attendance experience would positively influence team loyalty. However, when team engagement was also included as an antecedent of fans' loyalty intentions, the effect of satisfaction on loyalty may be diminished and become less significant.

The mediation test results are consistent with the findings from Hapsari et al.'s (2017) study on Indonesian airlines where customer satisfaction exerted an indirect effect on customer loyalty through customer engagement. However, to date, there is no published literature examining the mediating role of team engagement on the relationship between spectator satisfaction and team loyalty in the professional sports industry. The findings of the present research provide empirical

evidence for the notion that spectator satisfaction may affect team loyalty indirectly through team engagement in the sporting context.

Given the significant direct and indirect effects spectator satisfaction has on team loyalty, NBA teams should deliver a satisfying game-attending experience that will keep their fans attending future games. Teams may need to prioritise building a robust understanding of the individual fans' behaviours and interests and providing personalised fan experiences. Some personalisation strategies may include, but not be limited to, introducing new and unique experiences that match fans' personal interests, offering customised entertainment options, and providing opportunities for fans to sit with others with shared interests and passion.

6.2.3 Team Image

Team image also showed a significant and positive direct effect on team loyalty. The test results for Hypothesis 6 suggested a significant positive path from team image to team loyalty, with the standardised coefficient $\beta = 0.161$, $p < 0.01$. NBA fans who perceived a positive team image were more likely to attend future games played by the team, speak positively about the team and recommend the team to other people. The test results aligned with the findings from other studies on the sports industry (Bauer et al., 2008; Chen et al., 2017; Rohman, 2019; Yun et al., 2020).

In addition to the direct effect, team image also exerted a significant indirect effect on team loyalty through team engagement and spectator satisfaction. The test results for Hypotheses 19 and 20 indicated that team engagement and spectator satisfaction partially mediated the positive relationship between team image and team loyalty. The findings indicated that if team image was the only criterion used to decide NBA fans' behavioural intentions, a positive perceived team image would positively affect team loyalty. However, when NBA fans also consider the level of team engagement or spectator satisfaction before deciding their loyalty intentions, the effect of team image on team loyalty may be decreased.

The indirect effect of team image on team loyalty through team engagement is consistent with the findings from Hapsari et al.'s (2017) study on the airline industry, where brand image affected customer loyalty indirectly through customer engagement. Furthermore, the mediating role of spectator satisfaction was consistent with the findings from Duan and Liu's (2021) study on the Chinese marathon event, where spectator satisfaction partially mediated the effect of event image on spectators' behavioural intentions. However, to date, published research that has examined the mediating roles of team engagement and spectator satisfaction on the positive relationship between team image and team loyalty is sparse. The findings of the present research provide

empirical evidence that team image may affect team loyalty indirectly through team engagement and spectator satisfaction in professional spectator sports.

The positive direct and indirect effects of team image on team loyalty highlight the need to promote a positive image for NBA teams. Teams could consider expanding their targeted communication strategies to influence fans' perceptions of team image. Marketing messages, such as about the history and achievement of the team, the quality of coaches and players, and the social responsibilities of the team, should be integrated into the marketing communications plan to help build a positive team image.

6.2.4 Service Quality

Service quality did not show a significant direct effect on team loyalty. The path from service quality to team loyalty was nonsignificant, with the standardised coefficient path of $\beta = -0.003$ ($p > 0.1$). Thus, Hypothesis 3 was rejected. The nonsignificant causal relationship between the two constructs indicated that the perceived service quality might not directly impact NBA fans' intentions to attend future games played by their favourite team, speak positively about the team, or recommend the team to other people.

The nonsignificant relationship between service quality and team loyalty in the present research is inconsistent with the findings from studies on the sports industry conducted by Alexandris et al. (2017) and Avourdiadou and Theodorakis (2014). There are two plausible explanations for the inconsistent research findings. Firstly, several researchers note that service quality may only affect team loyalty indirectly through other constructs (Biscaia et al., 2013; Koo et al., 2008; Rohman, 2019). The research model used in the present research contained the constructs of team engagement, spectator satisfaction and team image which mediated the positive effect of service quality on team loyalty. The test results for Hypothesis 16 revealed that spectator satisfaction fully mediated the effect of service quality on team loyalty. The test results for Hypotheses 15 and 17 indicated that team image and team engagement played partial mediating roles on the positive relationship between service quality and team loyalty, respectively. The mediating test results suggested that NBA spectators who perceived a superior level of service quality tended to form a positive image towards the team, engage with the team, and feel satisfied with their game-attendance experiences, which may lead, in turn, to team loyalty.

Furthermore, the effect of service quality on team loyalty may be influenced by fans' experience levels (Avourdiadou & Theodorakis, 2014). Avourdiadou and Theodorakis (2014) find that the effect of service quality on loyalty tends to be weaker for experienced sports consumers, as they may rely more on satisfaction judgments when deciding their behavioural intentions. In Avourdiadou and

Theodorakis's (2014) study on the public sports and fitness centres in Greece, the direct effect of service quality on customer loyalty was found significant only for novice customers and not for experienced customers. As discussed in Section 5.3, 91 % of the respondents in the present research had been an NBA fan for five years or more, and 74.1% of the respondents had attended two or more NBA games per year. These respondents had relatively intensive experiences in attending live NBA games, and therefore, service quality may have a weak direct effect on team loyalty.

Although no significant direct effect of service quality on team loyalty was found in this research, service quality positively affected team loyalty through team image, team engagement and spectator satisfaction. Therefore, NBA teams need to consistently deliver a superior level of service quality and dedicate to solving problems when service failures occur. Teams need to continue to provide fans with high-quality and compelling games on the court, a comfortable and accessible stadium that matches fans' expectations, and that fosters an exciting and energetic environment. In addition to the above-stated drivers of service quality, teams may also need to develop a deeper understanding of their own individual fan bases in order to personalise sets of offerings to individual fans.

6.2.5 Player Loyalty

Player loyalty did not show a significant positive effect on team loyalty. The test results for Hypothesis 12 revealed that the standardised coefficient path from player loyalty to team loyalty was $\beta = -0.083$ ($p > 0.1$). The findings suggested that NBA fans' loyalty to their favourite player may not significantly influence their loyalty to the team. One possible reason for the nonsignificant relationship between player loyalty and team loyalty may relate to the duration of being an NBA fan. As discussed in Section 5.3, 91 % of the respondents in the present research had been an NBA fan for 5 years or more. Long-time NBA fans may have often experienced player transactions, with players joining or leaving their favourite teams, as the NBA transaction system allows players to switch teams upon request (Raphael, 2019). Therefore, these NBA fans' loyalty to a specific player may have a less significant impact on their loyalty to the team. Alternatively, some recent NBA fans may be 'bandwagon fans' who follow the tide and support teams with recent success or star players (Lang, 2019; Steinberg, 2014; Zhang et al., 2018). These fans may not have a strong connection to the team. Thus, the strength of the relationship between player loyalty and team loyalty may be different among these fans.

The present research is the first attempt to conceptualise the player loyalty construct and examine its interrelationships with other constructs in the professional sports setting. It should be noted that other factors, such as player activism, player performance and team performance, which are

not included in the present research model may also influence NBA fans' perceptions of player loyalty and its relationship with team loyalty.

6.3 The Interrelationships among the Higher-order Marketing Constructs

The interrelationships among team engagement, spectator satisfaction, team image, service quality, negative team behaviour, and player loyalty were also examined in the present research.

6.3.1 Team Engagement

Hypotheses 2, 5, 9 and 13 were tested to examine the impacts of service quality, team image, negative team behaviour and spectator satisfaction, respectively on team engagement. The test results revealed that service quality, team image and spectator satisfaction exerted significant positive effects on team engagement. Negative team behaviour did not have a significant negative impact on team engagement. Thus, to enhance team engagement, NBA teams should focus on developing strategies to provide spectators with satisfying game-attendance experiences, create and promote a positive team image, and deliver a superior level of service quality consistently.

The test results are interpreted and discussed as follows:

Spectator satisfaction was a strong predictor of team engagement. The test results for Hypothesis 13 revealed a significant positive path from spectator satisfaction to team engagement, with the standardised coefficient $\beta = 0.326$ ($p < 0.01$). The findings suggested that NBA spectators who had an overall satisfying game-attendance experience tended to engage with their favourite NBA team by following the team on social media platform(s), sharing team-related information with other people, interacting with other fans, and participating in team-related events or activities. The positive relationship between spectator satisfaction and team engagement was similar to the findings from studies in other service industries (Abror et al., 2019; Carlson et al., 2019; Hapsari et al., 2017), where customer satisfaction positively affected customer engagement. However, to date, published research examining the relationship between spectator satisfaction and team engagement in the sports industry is sparse. The findings of the present research provide empirical evidence for the positive path from satisfaction to engagement in the sporting context.

Team Image also exerted a significant direct effect on team engagement. The standardised coefficient path from team image to team engagement was $\beta = 0.310$ ($p < 0.01$), supporting Hypothesis 15. The test results indicated that the more positive the team image, the more likely NBA fans were to engage with the team. The results were in accordance with the findings from several studies on service industries where brand image affected customer engagement positively

(Hussein, 2018; Islam & Rahman, 2016). To date, only limited published literature has examined the relationship between team image and team engagement in the sporting context.

Furthermore, service quality also had a significant positive effect on team engagement. The test results for Hypothesis 2 indicated a significant path from service quality to team engagement, with the standardised coefficient $\beta = 0.224$ ($p < 0.1$). The findings suggested that NBA fans who perceived a superior level of service quality were likely to demonstrate team engagement behaviours, including following the team on social media platform(s), sharing team-related information with other people, interacting with other fans, and participating in team-related events or activities. The test results were consistent with the findings from the service marketing literature (Abror et al., 2019; Jones et al., 2019; Roy et al., 2018; Vo et al., 2020), where service quality positively affected customer engagement. However, to date, there is limited published literature examining the relationship between service quality and team engagement in the professional sports industry. The findings in the present research provide empirical evidence for the positive relationship between the two constructs in the sporting context.

Negative team behaviour did not show a significant negative effect on team engagement. The test results for Hypothesis 9 revealed a nonsignificant path from negative team behaviour to team engagement, with the standardised coefficient $\beta = -0.036$ ($p > 0.1$). The test results suggested that the on- and off-court negative behaviour by players, coaches or other key staff of an NBA team may not significantly decrease fans' willingness to engage with the team. The nonsignificant relationship between the two constructs may reflect the fact that there were few reported negative team behaviours during the 2019-2020 NBA season when the research data were collected.

Only four NBA players and one NBA team owner out of 30 NBA teams were reported to be involved in negative team behaviour in the 2019-2020 NBA season (B. Lewis, 2019; Maloney, 2019; Martin, 2019; NBA, 2019c; Wojnarowski, 2019). The effect of negative team behaviour on team engagement might be different if NBA fans were exposed to a large number of reports on negative team behaviour. The present research is the first attempt to empirically examine the relationship between negative team behaviour and team engagement in the NBA.

6.3.2 Spectator Satisfaction

Hypotheses 4 and 7 were tested to examine the impacts of service quality and team image, respectively on spectator satisfaction. The test results revealed that service quality had a significant positive effect on spectator satisfaction, while team image did not affect spectator satisfaction significantly.

Service quality was a strong predictor of spectator satisfaction. The test results for Hypothesis 4 revealed a significant positive relationship between service quality and spectator satisfaction, with the standardised coefficient $\beta = 0.806$ ($p < 0.01$). The findings suggested that NBA spectators who perceived a high level of service quality were likely to feel satisfied with their game-attendance experiences. The positive relationship between service quality and spectator satisfaction was consistent with the findings from other studies in the sporting context (Calabuig Moreno et al., 2014; Koo et al., 2008; Son et al., 2018; Theodorakis et al., 2013). In order to provide fans with a satisfying game-attending experience, NBA teams need to consistently deliver high-quality service and dedicate to solving problems when service failure occurs. In addition to providing fans with a high-quality game on the court and an accessible and comfortable stadium that fosters an exciting and energetic environment, teams may also need to develop a deeper understanding of their individual fan bases to personalise sets of offerings to individual fans.

Furthermore, team Image did not show a significant positive effect on spectator satisfaction. The standardised coefficient path from team image to spectator satisfaction was $\beta = 0.08$ ($p > 0.1$), rejecting Hypothesis 7. The test results indicated that a positive perceived team image might not lead to spectator satisfaction. The nonsignificant relationship between the two constructs was inconsistent with the findings from Yun et al.'s (2020) study on Australian men's professional soccer. The nonsignificant effect of team image on spectator satisfaction in the present research may have occurred because service quality was a dominant driver of spectator satisfaction (see Hypothesis 4). However, Yun et al. (2020) did not include service quality in their research model.

6.3.3 Team Image

Hypotheses 1 and 8 were tested to examine the effects of service quality and negative team behaviour, respectively on team image. The test results revealed that service quality positively affected team image, while the negative team behaviour did not show a significant negative impact on team image.

The test results for Hypothesis 1 showed a significant positive relationship between service quality and team image, with the standardised coefficient $\beta = 0.420$ ($p < 0.01$). The findings suggested that NBA fans who perceived a superior level of service quality tended to form a positive image towards the team. The test results were similar to the findings from several studies in the sporting context where service quality was found to affect sports event image positively (Jeong & Kim, 2020; Moon et al., 2013; Yamaguchi et al., 2015). To date, only limited published literature has examined the relationship between service quality and team image in professional spectator sports. The findings from the present research highlight the importance of consistently delivering high service quality for NBA teams in order to build and enhance a positive team image.

Negative team behaviour did not show a significant negative effect on team image. The test results for Hypothesis 8 revealed a nonsignificant path from negative team behaviour to team image, with the standardised coefficient $\beta = -0.011$ ($p > 0.1$). The test results suggested that negative team behaviour might not significantly harm fans' perceptions of team image. The nonsignificant relationship between the two constructs may have been a result of the limited media reports about negative team behaviour during the 2019-2020 NBA season when the data were collected (see Section 6.3.1).

6.3.4 Player Loyalty

Hypothesis 10 examined whether there was a significant positive effect of team engagement on player loyalty. The test results demonstrated that no positive relationship between the two constructs ($\beta = -0.401$). The findings suggest that NBA fans' team engagement behaviour, such as following the team on social media platform(s), sharing team-related information with other fans, and participating in team-related events or activities, may not lead to their loyalty to a specific player.

Several reasons that may explain the significant negative relationship between team engagement and player loyalty.

First, as discussed in Section 6.2.1, the present research findings demonstrate a significant positive and direct effect of team engagement on team loyalty. NBA fans who are highly engaged with their favourite NBA team may also exhibit loyalty to the team. These fans tend to attend future games played by the team, spread positive word-of-mouth for the team, and recommend the team to other people. Such strong team loyalty may even decrease fans' loyalty to a specific player. A recent example comes from Ben Simmons, an NBA player for the Philadelphia Sixers. He has had a large number of fans in Philadelphia since he joined the team in the 2016-2017 season (Buckner, 2017). In September, 2021, he publicly stated that he did not want to play for the Sixers anymore and would sit out the entire 2021-2022 season if not traded (Herman, 2021). Ben Simmons's behaviour has infuriated loyal Sixers fans who have acted against him and blamed him for being selfish and self-centred (Dadhwal, 2021; Pickens, 2021).

Second, ninety-one percent of the respondents in the present research had been an NBA fan for 5 years or more (see Section 5.3). These fans may have engaged with their favourite team for a long time and may have often experienced player transactions. Through enduring fan-team engagement, these fans may have formed a relatively high level of loyalty to the team. Therefore, team engagement may not show a positive effect on player loyalty. However, the relationship

between the two constructs may be different among short-time NBA fans, but this relationship has not been tested.

The present research is the first attempt to conceptualise the player loyalty construct and examine its interrelationships with other constructs. It should be noted that factors that were not included in the present research model could also influence NBA fans' loyalty towards a specific player. For example, player activism may be a potential factor that can influence sports fans' support for a player (Asada et al., 2021; Kaufman, 2008; Schmidt et al., 2018). According to Schmidt et al. (2018), player activism is defined as "an amateur or professional athlete's practices that aim, collectively or individually, institutionally or informally, to promote progressive social change" (p.32).

After the death of George Floyd in May 2020, several NBA players joined the Black Lives Matter protests to call for social justice (Deb, 2020). Calling attention to ongoing anti-racism protests, most NBA players knelt during the national anthem at 2020-2021 season opener games, wearing 'Black Lives Matter' shirts (Martin, 2020). Players of the Milwaukee Bucks boycotted their first-round playoff game in 2020, as a protest against police brutality (Jonhson, 2020). Some NBA players, such as LeBron James, who engaged in social activism have received criticism from news media personalities, politicians and NBA fans (Fox News, 2020; Guardian, 2020).

However, the impact of player activism on fan support may be complex (Asada et al., 2021). According to the Marist Poll (2020), when sports fans in the United States were asked to describe the viewing impact of players' calls for racial justice, approximately 70% of Republicans said they were less likely to watch sports due to players' calls for racial justice, but 61% of Democrats and 47% of Independents said players speaking out had not changed their viewing habits. In fact, approximately 31% of Democrats and 24% of Independents said they had watched sports more often because of player activism (Marist Poll, 2020).

In addition to player activism, other factors - such as player performance, team performance- and the demographic characteristics of fans, may also influence NBA fans' perceptions of player loyalty.

6.4 Age and Gender Differences

Hypothesis 21 was tested to examine whether NBA fans' perceptions of the interrelationships among service quality, spectator satisfaction, team image, negative team behaviour, team engagement, player loyalty and team loyalty vary between two age groups (Group 1: aged under 36 years; Group 2: aged 36 years or over). Hypothesis 22 was tested to examine whether NBA fans' perceptions of team loyalty differ between males and females. The findings from the present research may assist NBA practitioners in developing their demographic segmentation strategies based on age and gender. With segmentation, NBA teams may be able to target their customers

more precisely and carry out marketing strategies in a more focused way (Martins et al., 2012; McDonald & Dunbar, 2012).

6.4.1 Age Differences

The MGA test results for Hypothesis 21 revealed significant age differences on five individual paths: service quality to team image; service quality to spectator satisfaction; team image to spectator satisfaction; team image to team engagement; and team image to team loyalty. The age differences on individual paths are discussed as follows:

Service Quality-> Team Image; Service Quality -> Spectator Satisfaction

The path coefficients from service quality to team image for Group 1 and Group 2 were 0.328 and 0.497, respectively. The test results suggested that NBA fans aged 36 or over who perceived a high level of service quality were more likely to form a positive image towards the team compared to fans aged under 36.

The path coefficients from service quality to spectator satisfaction for Group 1 and Group 2 were 0.618 and 0.942, respectively. Service quality had a greater effect on spectator satisfaction among fans aged 36 or over than among fans aged under 36.

The group differences in the effects of service quality on team image and spectator satisfaction may be affected by several factors such as fans' income level. In the United States, the average household income for people aged 36 or over may generally be higher than the household income for people aged under 36 (Statista, 2021b). In the present research sample, fans aged 36 or over may have paid a premium price for their NBA game tickets in order to get a higher level of service quality. As a result, service quality may exert greater effects on team image and spectator satisfaction among older fans. The age differences would be better understood if the perceived value construct were included in the research model. To date, there is limited published literature examining how age would impact the interrelationships among service quality, spectator satisfaction and team image in the sporting context.

Given the particular importance of service quality for older NBA fans, teams need to cultivate a better understanding of these older fans' specific needs and interests, and then provide them with personalised and differentiated service programmes.

Team Image -> Spectator Satisfaction; Team Image -> Team Engagement

The path coefficients from team image to spectator satisfaction for Group 1 and Group 2 were 0.264 and -0.061, respectively. The test results indicated that fans aged under 36 who formed a

positive image towards their favourite NBA team were likely to feel satisfied with their game-attendance experiences. However, no significant positive relationship between team image and spectator satisfaction was found among fans aged 36 or over.

A significant positive relationship between team image and team engagement was found in both Group 1 ($\beta = 0.444$) and Group 2 ($\beta = 0.199$). However, team image exerted a greater effect on team engagement among fans aged under 36 than those younger. The younger fans were more likely to engage with their favourite NBA team if they perceived a positive image of the team.

The group differences in the effects of team image on spectator satisfaction and team engagement may relate to the length of time being an NBA fan. The older fans may have been supporting their favourite NBA team for a relatively long time, and a positive team image may have already been built up in their minds. These fans may take a positive team image for granted, and therefore the effects of team image on spectator satisfaction and team engagement may be less significant. The test results were consistent with Karjaluoto et al.'s (2016) research findings that sports team brand personality, including team image, may have a weaker influence on fans' behavioural intentions among those who have a relatively long relationship with the team. To date, limited published research has investigated how age could impact the interrelationships among team image, spectator satisfaction and team engagement in the sporting context.

Findings from the present research suggested that team image had more significant effects on spectator satisfaction and team engagement for younger NBA fans. Therefore, NBA teams could formulate interactive team image strategies that appeal across fan affiliation personas, in particular, for younger fans. For example, when a team's playing jersey changes, NBA teams should target younger fans by promoting the change on social media.

Team Image -> Team Loyalty

The path coefficients from team image to team loyalty for Group 1 and Group 2 were -0.054 and 0.452, respectively. The test results revealed that the positive relationship between team image and team loyalty was significant for fans aged 36 or above, but not for younger fans.

The group differences may be explained by the mediation role that team engagement played on the positive relationship between team image and team loyalty. As discussed in Section 5.6.2.5, the effect of team image on team loyalty was partially mediated by team engagement. Compared to older fans, younger fans may be more likely to engage with their favourite sports team through various social media platforms (Brown et al., 2018; Haugh & Watkins, 2016). As a result, the effect of team image on team loyalty may become less significant among younger fans.

6.4.2 Gender Differences

The one-way ANOVA test results for Hypothesis 22 indicated that NBA fans' perceptions of team loyalty varied between males and females. The mean scores for team loyalty were higher among female fans than among males. Compared to male NBA fans, females were more likely to spread positive word-of-mouth, recommend their favourite team to other people, and attend future games played by the team. The test results are consistent with James and Ridinger's (2002) findings, where female fans were likely to have a greater inclination toward future loyalty to the team.

The findings of the present research may offer insights into gender differences in the NBA. In masculine sports such as football and basketball, fandom has traditionally been considered as males' domain, and female fans are often considered subordinate (Shane-Nichols et al., 2021). However, the present research found that female NBA fans showed a higher level of loyalty than male fans. Given that female NBA fans' viewership continues to grow (Deloitte, 2020; Mahoney, 2010), NBA teams may need effective strategies to develop and retain a loyal female fanbase.

6.5 Theoretical Contributions

The present research contributes to the service marketing literature, especially the sports marketing literature, in five ways. Firstly, this research provides a single comprehensive framework examining the interrelationships among seven important higher-order marketing constructs in the context of the NBA. Both direct and indirect effects among these constructs were empirically tested by the model. A comprehensive analysis may foster a deeper understanding of the interrelationships among these constructs and determine their relative impact on team loyalty (Bauer et al., 2008; Theodorakis et al., 2013; Yun et al., 2020). The comprehensive modelling approach used in the present research provides a platform for future studies that examine the complex interrelationships among these constructs in other sporting contexts.

Secondly, the findings of the present research provide empirical evidence for the mediating roles of team engagement, team image and spectator satisfaction on the constructs affecting team loyalty. Several prior studies assessed only the direct causal effects of service quality (Alexandris (Alexandris et al., 2017; Lee et al., 2017), team image (Chen et al., 2017; Lee et al., 2017; Yun et al., 2020) and spectator satisfaction (Koo et al., 2014; Theodorakis et al., 2013; Yun et al., 2020) on fan loyalty. However, little is known about the potential mediating effects among these constructs in the sporting context. The present research found that service quality affects team loyalty only indirectly through team engagement, team image and spectator satisfaction. Furthermore, team engagement and spectator satisfaction were found to partially mediate the positive relationship

between team image and team loyalty. The effect of spectator satisfaction on team loyalty was partially mediated by team engagement. The mediating effects found in the present research will provide insights into the interrelationships among these constructs in the sporting context.

Thirdly, the present research is the first attempt to conceptualise the player loyalty construct and empirically examine its interrelationships with other constructs in the professional sports setting. The findings suggested that player loyalty did not show a significant positive effect on team loyalty, and no positive relationship was found between team engagement and player loyalty. However, other variables, such as player activism, player performance, team performance and the demographic characteristics of NBA fans, that were not included in the present research model, may influence fans' perceptions of player loyalty.

The fourth contribution relates to the inclusion of the negative team behaviour construct in the research model. Although some researchers have examined negative team behaviour in the sports industry, most published studies focus on developing effective responses to negative behaviour from a public relations perspective (e.g., Abeza et al., 2020; Lee & Kwak, 2017; Meng & Pan, 2013). To date, little is known about the potential impacts of negative team behaviour on other important constructs from a marketing perspective. The findings in the present research provide empirical evidence for the interrelationships among negative team behaviour, team image and team engagement in the sporting context.

Lastly, the findings of the present research contribute to the understanding of how age and gender may influence fans' perceptions and behaviours in the professional sports industry. While some prior studies have investigated age or gender differences in the NBA (e.g., McCabe (e.g., McCabe, 2008; Mondello & Gordon, 2015; Zhang et al., 1995), these studies were primarily based on qualitative or descriptive analysis and did not empirically test the differences in the path models. The test results of the present research indicated that age moderated the effects of service quality on team image and spectator satisfaction and moderated the effects of team image on spectator satisfaction, team engagement and team loyalty. NBA fans' perceptions of team loyalty were also found to differ between males and females. The findings of this research may offer insights into the roles of age and gender in the sporting context.

6.6 Managerial Implications

Previous research findings suggest that maintaining fan loyalty is a time- and cost-effective strategy for sports organisations to gain long-term competitive advantages in a highly competitive business environment (Gladden & Funk, 2001; Park et al., 2019; Theodorakis et al., 2013; Yun et al., 2020). Implementing effective marketing strategies to develop and maintain loyal fans has become a top

priority for many sports organisations (Chung et al., 2019; Wu et al., 2012; Yun et al., 2020). Some insightful implications that flow from the findings of the present research were discussed in detail with the test results in Sections 6.1-6.3.

The research findings of the antecedents of team loyalty and their interrelationships can assist NBA practitioners in developing marketing strategies to develop and retain loyal fans. In addition, the findings of the present research contribute to the understanding of how age and gender can influence fans' perceptions and behaviours in the NBA. Understanding age and gender differences may allow NBA practitioners to develop demographic segmentation strategies based on gender and age. With segmentation, NBA teams may be able to target their customers more precisely and carry out marketing strategies in a more focused way (Martins et al., 2012; McDonald & Dunbar, 2012).

6.7 The COVID-19 Pandemic

6.7.1 The COVID-19 Pandemic and Its Impacts on the NBA

The COVID-19 pandemic is an ongoing pandemic of coronavirus disease (World Health Organization, 2020a). The virus was first identified in December, 2019 in Wuhan, China (Ma, 2021). The WHO declared a Public Health Emergency of International Concern regarding COVID-19 on 30 January, 2020 (World Health Organization, 2020a), and later declared a pandemic on 11 March, 2020 (Organization, 2021b). As of 4 January, 2022, there were more than 292 million confirmed cases in the world, with more than 5.44 million confirmed deaths attributed to COVID-19 (Johns Hopkins University, 2022). In the United States, a national emergency was declared due to the COVID-19 pandemic on 13 March, 2020 (Liptak, 2020). As of 4 January, 2022, more than 56 million cases had been confirmed, with more than 827,000 confirmed deaths attributed to COVID-19 (Johns Hopkins University, 2022).

The COVID-19 pandemic has caused significant disruption to professional sports leagues in the United States, including the NBA (LA Times, 2020). On 11 March, 2020, the NBA announced the suspension of the 2019-2020 season following the news that an NBA player had tested positive for COVID-19 (Cacciola & Deb, 2020). The season resumed in July with 22 teams isolated together at Walt Disney World in Orlando, Florida (known as 'the NBA bubble') to play games without spectators (ESPN, 2020). From the start of the resumed season until the end of the NBA Finals in October, 2020, the season ended with no recorded cases of COVID-19 for the teams participating in the bubble (Zillgitt, 2020).

Although the NBA succeeded in operating in a safe and healthy environment that mitigated the spread of COVID-19 (Zillgitt, 2020), the league has suffered a huge financial loss due to the COVID-19 pandemic (Wojnarowski & Lowe, 2020). The league's revenue dropped 10% to \$8.3 billion for

the 2019-2020 season from losses due to the COVID-19 pandemic (Wojnarowski & Lowe, 2020). Furthermore, the TV ratings for the playoff games in the 2019-2020 NBA season also declined dramatically, down 37% compared to 2019 (Beer, 2020).

However, as COVID-19 testing became more available and more vaccines were being administered in the United States, the NBA gradually allowed fans to return to the stands in the 2020-2021 season (Yun, 2021). As of 31 March 2021, 21 NBA teams had permitted limited attendance of ticketed fans in the respective arenas (NBA, 2021a). By the playoffs of the 2020-2021 season, relaxed social distancing measures were implemented and some stadiums had increased to full capacity (Yun, 2021). In the meantime, viewership also saw a significant increase in the 2020-2021 NBA finals (Young, 2021). The finals featuring the Milwaukee Bucks and Phoenix Suns attracted 9.9 million viewers overall, up 32% compared to the previous season (Young, 2021).

With the COVID-19 vaccine programme continuing in the United States, there is an optimistic outlook for more NBA fans to return to the stands in the future (Holmes, 2021). The league reportedly expects all arenas to be at full capacity and a return to its normal game calendar in the 2021-2022 season (Holmes, 2021).

Based on the online survey data collected from 395 NBA fans, Schellenberg et al. (2021) note that NBA fans tend to feel a loss of personal identity due to the suspension of the 2019-2020 season and they have a desire for the league returning to normal. According to Wakefield (2021), approximately 65% of surveyed NBA fans believe that the league is pointed in the right direction, and over 61% of surveyed NBA fans say that they will watch more NBA games in the upcoming seasons.

6.7.2 The Implications of the Research Findings for the NBA in the Future

Along with the disruption to professional sports leagues and events, the COVID-19 pandemic has put many countries or territories in a state of lockdown where people were recommended to stay at home and continue social distancing (Wong et al., 2020). These restrictions may have considerable impacts on people's perceptions and behaviours in terms of leisure, recreation and exercise (Schellenberg et al., 2021; Skinner & Smith, 2021; Wong et al., 2020).

However, several researchers suggest that attending live sports games plays a vital role in people's lives and there may be no substitute for such experiences (Schellenberg et al., 2021; Skinner & Smith, 2021; Weimar et al., 2021; Yun, 2021). Yun (2021) notes that attending live sports games offers fans relief, especially during a moment of crisis like the COVID-19 pandemic. Such game-attending experiences provide fans with an opportunity to put aside disagreements and celebrate achievement collectively. When the major professional soccer leagues were suspended during the

COVID-19 pandemic, Weimar et al. (2021) report that the Belarusian Premier League, a small professional league that was still operating during the pandemic, attracts more followers and engagement from fans. Weimar et al.'s (2021) findings demonstrate that there may be no substitute for a live sports experience.

The primary data used in this research were collected from respondents who had attended live NBA games between January 2019 and January 2020. The findings of this research were based on respondents' live NBA game-attendance experiences before the COVID-19 pandemic. The present findings, such as fans' perceptions of the seven marketing constructs and their interrelationships, may have been different if COVID-19 were taken into consideration. Although the extent to which NBA fans' perceptions and behavioural intentions might change due to the COVID-19 pandemic is beyond the scope of this research, and any changes warrant further exploration. The present research findings may still offer insights for NBA teams to develop and maintain loyal fans during and after the pandemic.

The present research findings show that team engagement is a robust antecedent of team loyalty. Highly engaged fans tend to attend future games played by their favourite NBA team, spread positive word-of-mouth about the team, and recommend the team to other people. Given the significance of team-fan engagement, NBA teams may need to find innovative ways to keep their fans connected and engaged during and after the COVID-19 pandemic. Along with offline engagement activities, such as community outreach events and on-court interactions, NBA teams should adopt new interactive and online components to engage with their fans. For example, teams should utilise virtual technology to create a platform where fans can attend virtual NBA games and communicate with each other. NBA teams should also incorporate artificial intelligence and machine learning techniques to provide more personalised engagement content for fans. A mix of in-person, hybrid and virtual engagement initiatives may help NBA teams find more opportunities to develop and maintain a loyal fan base in the future.

Team Image is also found to positively influence team engagement and team loyalty in this research. The NBA receives and will continue to receive significant public attention in and after the COVID-19 pandemic (Holmes, 2021). NBA teams may need to expand their current marketing strategies into more public health-related initiatives to build a positive team image. Teams should be involved in activities to raise public health awareness, such as promoting COVID-19 vaccinations and encouraging adherence to health advice. NBA teams may also consider engaging in partnerships with local health authorities to reinforce public health messaging in community risks and prevention. These initiatives may help NBA teams demonstrate their social responsibilities and

form a positive image in the public. A positive team image may, in turn, help increase team-fan engagement and lead to future game attendance.

The present research also finds that service quality shows a significant indirect positive impact on team loyalty. Because of the COVID-19 pandemic, health and safety are becoming increasingly important for many sports fans (Skinner & Smith, 2021). NBA teams should prioritise developing and implementing new service strategies to get fans back to stands in safety. Some examples may include ensuring a high standard of hygiene in stadium facilities, improving the ventilation system, and implementing measures that can facilitate contact tracing in the arena. NBA teams should also expand their service varieties via mobile devices. In addition to utilising e-ticket and other contactless transactions via mobile, NBA teams may need to integrate the COVID-19 vaccine passport into the mobile services, making vaccine status check and contact tracing more efficient and effective. These services may help foster a safe and comfortable live game environment for NBA fans. Such an environment may lead to a satisfying live game experience and motivate fans to attend future games.

The age and gender differences found in the present research will also offer NBA teams insights into their demographic segmentation strategies during and beyond this pandemic. The present research findings indicate that service quality exerts stronger positive impacts on spectator satisfaction and team image among older NBA fans. There is a need for NBA teams to develop a deeper understanding of older fans' specific needs and interests in services. For example, the use of some modern technologies, such as mobile applications, may continue to grow as more live game services go contactless and paperless during and after the pandemic. However, some older fans may not be well informed about or proficient in the use of modern technology. NBA teams should find ways to provide high-quality services for these fans feasibly and conveniently. Similarly, the present research finds that younger NBA fans who perceived a positive team image may be more likely to have a satisfying live game experience and engage with the team. Teams should therefore expand their current marketing communication strategies to build and promote a positive team image across all fans, particularly younger fans, during and beyond the COVID-19 pandemic.

6.8 Limitations of this Study

The present research has some limitations. The first limitation relates to the sampling. The sample was drawn using the convenience sampling method, so it might not represent the total population of NBA fans. Although the convenience sampling method is an appropriate sampling technique for testing theoretical premises or hypotheses, as in the case of the present research (Arnab (Arnab, 2017; Cochran, 1977; Leary, 2004; Zikmund, 2013), the results of the present research should be generalised with caution. In addition, male respondents comprised the majority of the sample,

which limited the application of an MGA analysis to examine gender differences in a comprehensive manner.

The second limitation relates to the online survey. The research data were collected through a self-administered online survey which was made available to NBA fans on a single social media platform (Facebook). NBA fans who do not have access to the internet or relevant social media platforms might have been inadvertently excluded from the sample. Furthermore, no identifying information was collected in this study. As a result, it was difficult to identify and describe the population that could have accessed and responded to the survey, and the exact motives of those who responded and how they responded to the survey were not examined (Andrade, 2020).

The third limitation relates to the constructs contained in the research model. This research integrated seven important higher-order marketing constructs into the research model. However, there may be other variables not included in this research that have interrelationships with the seven constructs. For example, variables such as perceived value and player activism may influence NBA fans' perceptions and behavioural intentions.

6.9 Directions for Future Research

Future studies may extend the present research by applying an MGA analysis to examine gender differences in the path model. An MGA analysis may enable researchers to understand whether NBA fans' perceptions of the interrelationships among the seven higher-order marketing constructs vary across genders.

Future research may use the present research model as a framework to examine the antecedents of team loyalty and their interrelationships for professional basketball in different cultural settings or other types of professional sports. A replication of the present framework may offer insights into team loyalty in different contexts.

Future research may incorporate additional marketing constructs, such as perceived value and player activism, into the research model to examine their direct or indirect impacts on team loyalty.

Future research on the player loyalty construct may be required. Exploratory studies may be conducted to gain a deeper understanding of the measurement items and the structure of player loyalty.

The findings from this research were based on NBA spectators' live game-attendance experiences before the COVID-19 pandemic. Researchers may need to investigate if the online/non-stadium game-watching experience is significantly different from the live game-attending experience among

NBA fans and re-examine the present findings by considering the COVID-19 pandemic and its impacts.

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Appendix A: Questionnaire

Consent Page

Research Project: Spectator Loyalty and Its Antecedents in the NBA

[Information Sheet for Survey Respondents](#)

Dear Respondent,

My name is Vienna and I am a PhD candidate in the Faculty of Commerce at Lincoln University in New Zealand. I would like to invite you to participate in my thesis research project by filling out this online survey. The aim of my research is to develop a better understanding of what drives fan loyalty in the NBA. In the survey, you will be asked about your experiences of attending games played by your favorite NBA team.

To participate in this research, you must be 18 years or older. Your participation in this project will involve completing an online survey that will take about 10 to 15 minutes. Participation is voluntary, and you can decide at any time not to finish the survey. Your answers will not become part of the study until you press the "Submit" button after answering all the questions.

The questionnaire is anonymous, and the identifying information such as your name, email address or IP address will NOT be collected. Your responses will be kept confidential, and all data will be stored in a password protected electronic format.

The results of this study will be published as part of my PhD thesis and will be submitted for publication in academic journals. No information will appear in these publications that will allow anyone to identify any individual respondent.

This project has been reviewed and approved by the Lincoln University Human Ethics Committee. If you have any questions or concerns about participation in the project, please do not hesitate to email me at Vienna.Yang@lincolnuni.ac.nz or phone +642108384854. You can also contact my research supervisors: Michael Clemes (Senior Lecturer) at Michael.Clemes@lincoln.ac.nz or phone +6434230225; or Kathryn Bicknell (Senior Lecturer) at Kathryn.Bicknell@lincoln.ac.nz or phone +6434230235; or Christopher Gan (Professor) at Christopher.Gan@lincoln.ac.nz or phone +6434230227.

Your assistance will contribute significantly to the success of my research. Every response is important, and I appreciate your willingness to help. Thank you for your time and assistance.

If you agree to participate in the study, you are asked to complete the consent form below.

Your Consent

By clicking the button below, you acknowledge that you have read the information provided above and you agree to it. You further acknowledge that your participation in the study is voluntary and you are aware that you may choose to terminate your participation in the study for any reason and at any time before submitting the survey.

- I consent. Begin the survey.
- I do not consent. I do not wish to participate.

Block 4

Have you attended any live NBA game(s) in the last 12 months (Jan 2019-Jan 2020)?

- Yes
- No

Section 2

How many NBA games do you attend, on average, each season?

- 1 game per year
- 2-5 games per year
- More than 5 games per year

Overall Service Quality

Note: Live NBA games refer to the games played by your favorite NBA team.

	1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Neutral	5 Somewhat Agree	6 Agree	7 Strongly Agree
Overall, the quality of my interactions with all employees involved in the live NBA games I attend is excellent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, the physical environment (e.g. atmosphere, stadium design, seating quality, sound and visuals) at the live NBA games that I attend is excellent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generally, I have enjoyable interactions with other spectators when I attend live NBA games.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generally, I receive my desired outcome (e.g. game competitiveness and entertainment) when I attend live NBA games.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Neutral	5 Somewhat Agree	6 Agree	7 Strongly Agree
Overall, the service quality of the live NBA games I attend is excellent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Satisfaction

Note: Live NBA games refer to the games played by your favorite NBA team.

	1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Neutral	5 Somewhat Agree	6 Agree	7 Strongly Agree
I normally have a satisfying experience attending live NBA games.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generally, I feel I have made the right decision to attend live NBA games.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I think attending live NBA games is a satisfying experience.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I am satisfied with my decision to attend live NBA games.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Team Image

	1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Neutral	5 Somewhat Agree	6 Agree	7 Strongly Agree
I believe that my favorite NBA team has a better image than its competitors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Neutral	5 Somewhat Agree	6 Agree	7 Strongly Agree
My favorite NBA team has a good reputation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My general impression of my favorite NBA team is good.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I am impressed by the brand image of my favorite NBA team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I think my favorite NBA team has a positive image in the market.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Team Engagement

	1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Neutral	5 Somewhat Agree	6 Agree	7 Strongly Agree
I follow my favorite NBA team on social media platform(s).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Any media information on my favorite NBA team attracts my attention.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I discuss the performance of my favorite NBA team with my friends and family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am interested in the community outreach of my favorite NBA team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy interacting with other fans of my favorite NBA team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Neutral	5 Somewhat Agree	6 Agree	7 Strongly Agree
I still support my favorite NBA team, even if the team performs worse than I expected.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm reluctant to display my connection with my favorite NBA team when they play poorly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy participating in activities to increase the local fan base of my favorite NBA team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Negative Team Behavior

Note: Team Behavior includes the behavior of NBA players, coaches, key supporting staff and owners.

	1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Neutral	5 Somewhat Agree	6 Agree	7 Strongly Agree
Negative on-court team behavior (e.g. violence and poor sportsmanship) of my favorite NBA team lowers my impression of the team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Negative off-court team behavior (e.g. doping and illegal betting) lowers my impression of my favorite NBA team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Negative on/off-court team behavior of my favorite NBA team harms the team's reputation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Neutral	5 Somewhat Agree	6 Agree	7 Strongly Agree
I am ashamed when I hear of negative on/off-court team behavior of my favorite NBA team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I think the image of my favorite NBA team will be damaged due to negative on/off-court team behavior.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, negative on/off-court team behavior of my favorite NBA team reduces my support for the team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Player Loyalty

	1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Neutral	5 Somewhat Agree	6 Agree	7 Strongly Agree
If my favorite player leaves my favorite NBA team, I will stop following the team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If my favorite player leaves my favorite NBA team, I will not support the team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If my favorite player is traded to another NBA team, I will follow the player and support the new team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If my favorite player signs with another NBA team, I will follow the player and support the new team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Spectator Loyalty

	1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Neutral	5 Somewhat Agree	6 Agree	7 Strongly Agree
I speak positively about my favorite NBA team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I recommend my favorite NBA team to other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I encourage relatives and friends to attend games played by my favorite NBA team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will attend NBA games of my favorite team in the future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My first choice is to attend NBA games played by my favorite team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section 3

In which state do you reside?

- California
- Other (please specify)

Your gender:

- Male
- Female
- Other

Your age group:

- 18-25
- 26-35
- 36-45
- 46-55
- 56 and above

Your highest level of education:

- High school
- Junior College
- Bachelor's Degree
- Master's Degree
- Doctorate Degree
- Other (please specify)

Your occupation:

- Students
- Professional
- Business owner
- Government employee
- Hospitality worker
- Trades (e.g. construction, plumbing, electrical, automotive)
- Retired
- Other (please specify)

Your monthly income range:

- Less than \$2,000
- \$2,000 - \$3,999
- \$4,000 - \$5,999
- \$6,000 - \$7,999
-

- \$8,000 - \$9,999
- \$10,000 or more

How long have you been a fan of your favorite NBA team?

- Less than 1 year
- 1-5 years
- More than 5 but less than 10 years
- 10 years or more

Block 5

Please select which is your favorite NBA team:

- | | |
|--|---|
| <input type="radio"/> Los Angeles Lakers | <input type="radio"/> Toronto Raptors |
| <input type="radio"/> Los Angeles Clippers | <input type="radio"/> Boston Celtics |
| <input type="radio"/> Golden State Warriors | <input type="radio"/> Brooklyn Nets |
| <input type="radio"/> Phoenix Suns | <input type="radio"/> New York Knicks |
| <input type="radio"/> Sacramento Kings | <input type="radio"/> Philadelphia 76ers |
| <input type="radio"/> Dallas Mavericks | <input type="radio"/> Chicago Bulls |
| <input type="radio"/> Houston Rockets | <input type="radio"/> Cleveland Cavaliers |
| <input type="radio"/> Memphis Grizzlies | <input type="radio"/> Detroit Pistons |
| <input type="radio"/> New Orleans Pelicans | <input type="radio"/> Indiana Pacers |
| <input type="radio"/> Denver Nuggets | <input type="radio"/> Milwaukee Bucks |
| <input type="radio"/> San Antonio Spurs | <input type="radio"/> Atlanta Hawks |
| <input type="radio"/> Minnesota Timberwolves | <input type="radio"/> Charlotte Hornets |
| <input type="radio"/> Oklahoma City Thunder | <input type="radio"/> Miami Heat |
| <input type="radio"/> Portland Trail Blazers | <input type="radio"/> Orlando Magic |
| <input type="radio"/> Utah Jazz | <input type="radio"/> Washington Wizards |

Appendix B: Normality

Items	Skewness	Kurtosis
SQ1	-1.609	3.256
SQ2	-1.868	4.640
SQ3	-1.593	3.246
SQ4	-1.179	1.808
SQ5	-1.235	2.233
ST1	-2.207	7.429
ST2	-1.471	2.776
ST3	-1.976	5.203
ST4	-2.104	6.378
TI1	-1.154	0.698
TI2	-1.234	0.804
TI3	-2.066	4.777
TI4	-1.548	2.361
TI5	-1.547	2.110
NTB1	-0.109	-1.086
NTB2	-0.493	-0.855
NTB3	-1.200	0.800
NTB4	-0.710	-0.069
NTB5	-0.489	-0.859
NTB6	0.269	-1.148
TE1	-2.379	6.528
TE2	-1.753	4.029
TE3	-2.147	5.617
TE4	-0.900	0.008
TE5	-1.356	1.662
TE6	-1.600	1.977
TE7	1.360	0.594
TE8	-0.639	-0.402
PL1	1.538	1.371
PL2	1.889	2.861
PL3	0.855	-0.204
PL4	0.981	0.132
TL1	-1.568	2.454
TL2	-1.209	0.637
TL3	-1.162	0.544
TL4	-1.792	2.931
TL5	-2.073	4.062