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Fan's commitment to sport team

A case study of FC Barcelona

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Con menos palabras, las ideas salen.

Hua Guang

What a lucky life it would be to be able to devote oneself to a field that one loves.

RESUMEN

Debido a diversas razones, la asistencia del FC Barcelona ha disminuido, la pérdida de seguidores ha sido importante y el compromiso psicológicode los aficionados se ha visto muy afectado. Basándose en el modelo de investigación existente, este artículo resume seis factores que influyen en el compromiso psicológico de los aficionados, y luego introduce el compromiso psicológico como variable de resultado para construir un modelo conceptual del compromiso psicológico de los aficionados del FC Barcelona, que se utiliza para estudiar la magnitud de la influencia de los seis factores diferentes. Se recogieron datos de los aficionados del FC Barcelona y los resultados indicaron efectos positivos significativos de la identidad personal, el compromiso afectivo, el coste de los recursos, el coste psicológico y el tribalismo regional en el compromiso psicológico de los aficionados; por último, basándonos en la situación de desarrollo del FC Barcelona, presentamos sugerencias y perspectivas de gestión sobre cómo mejorar la eficacia de la marca, potenciar la construcción de la marca y estabilizar el compromiso psicológico de los aficionados, proporcionando orientación teórica y práctica para su funcionamiento y desarrollo futuros.

Palabras clave: *Compromiso psicológico, FC Barcelona, Marketing, Compromiso del aficionado, Gestión deportiva.*

SUMMARY

Due to various reasons, FC Barcelona's attendance has declined, the loss of supporters has been significant, and the psychological commitment of fans has been greatly affected. Based on the existing research model, this article summarises six factors that influence fans' psychological engagement, and then introduces psychological engagement as an outcome variable to construct a conceptual model of FC Barcelona fans' psychological engagement, which is used to study the magnitude of the influence of the six different factors. Data were collected from FC Barcelona fans and the results indicated significant positive effects of personal identity, affective commitment, resource cost, psychological cost and regional tribalism on fans' psychological commitment; finally, based on the development situation of FC Barcelona, we present suggestions and management perspectives on how to improve brand effectiveness, enhance brand building and stabilise fans' psychological commitment, providing theoretical and practical guidance for future operation and development.

Palabras clave: *Psychological commitment, FC Barcelona, Marketing, Fan's commitment, Sport management.*

CONTENTS

1. INTRODUCTION

From 2008 to 2020, FC Barcelona had its greatest period of success since its foundation, during which they won eight La Liga Champions, six Copa del Rey and Supercopa de España titles, three UEFA Champions League and Supercopa de España titles, three Club World Cup titles, three Catalan Cup titles and all the Gamble Cup titles except for 2009, under the leadership of coach Pep Guardiola. Catalan Cup titles and all Gamble Cup titles except 2009, based on which, on August 3, 2020, FC Barcelona was ranked 8th in the TOP 25 most valuable sports teams in the world in 2020 with a value of $4.02 billion. Its home stadium, the Camp Nou Stadium, is the largest in the entire continent of Europe and the second largest in the world, after the Maracana Stadium in Brazil.

With the second largest home stadium in the world and a value of $4 billion, FC Barcelona also has a huge fan base. According to data from a 2010 Sport+Markt study, FC Barcelona had the largest fan base of any club in Europe in 2010. Barcelona can claim to have an impressive 57.8 million fans in Europe, almost twice as many as their most iconic rivals, fellow Spanish giants Real Madrid (31.3 million). And now, last June 18, 2021, FC Barcelona sent out a tweet saying:¨We have just reached 400 million social media followers¨, with over 130 million followers on Facebook and 110 million on Instagram, but that 400 million followers do not mean that Barcelona has 400 million followers worldwide, as many followers are on different social media are following their favorite football clubs, while at the same time, according to Ana M. López in FC Barcelona fans clubs worldwide 2021, by region, until June 2021, FC Barcelona has a total of 1,259 fans worldwide Of these, 436 are in Catalonia, 667 in the rest of Spain and 156 in the rest of the world, which shows that although Barcelona has a large fan base worldwide, its main fans are from Catalonia or the rest of Spain.

In recent years, with COVID-19 and the transfer of Barcelona's former core players, Lionel Messi and Luis Suarez, the Camp Nou stadium, which could have hosted 99,354 people for the match, had only 37,278 people buy tickets for an important and prestigious match like the national derby (Barcelona vs Real Madrid), with an attendance rate of less than 40%. Although this was partly due to the drizzle, in previous decades, matches such as the city derby have always been hard to come by, a huge gap that makes one wonder just how many fans this cosmic team, Barça, will lose after the departure of stars such as Lionel Messi, while enduring the COVD-19. A reasonable hypothesis is that fans will change their support for the team

because the departure of their club's original star players affects the fans' psychological commitment to the team. Fans are a club's most valuable asset and it is because of their support that the team can grow step by step, and research into the fans' psychological commitment to the team can help the team's marketers to better understand and grasp their customers. The study of the fans' commitment to the team can help the marketing staff to better understand and grasp their customers, to further segment the market, and develop and change marketing strategies based on relevant data. This is why a club must understand the psychological commitment of its fans and the factors that influence it.

On the other hand, psychological commitment and loyalty are often inextricably linked, yet they are not identical; loyalty is the behavioral generation of the attitudinal component stemming from psychological commitment, while team identity is the result of loyalty and commitment leading to one's social identity. A great deal of research has been conducted in the United States and Japan, as well as in some other countries, including the development of the Multidimensionality of Fans' Psychological Commitment to Sports Teams - Scale (Hirotaka Matsuoka, M.S, The Ohio State University 2001). In Spain, no one has yet used such a scale to study the psychological commitment of fans of professional football clubs. In addition, since differences in economic ideologies, habits, cultural practices and even types of sports between countries may have an important influence on how people behave and think, this paper will also refine and adapt the scale to suit the psychological commitment of fans in different regions, especially considering the impact of recent epidemics.

This study aims to examine the psychological commitment of fans to a specific team and the factors that influence it, using Barcelona Football Club as an example. In addition, the relationship between these factors and the fans' commitment to the future of the team is discussed. Finally, experiences and influences are summarised and recommendations are made for clubs as well as for sports marketers.

2. REVIEW OF LITERATURE

2.1. BARCELONA FOOTBALL CLUB

FC Barcelona has a strong fan base and according to a report by Statista Global Consumer Survey - Content Special European Football Benchmark, for the 2018 to 2019 season, out of a randomly selected group of La Liga 15,000 fans, 36% of them are FC Barcelona fans, with 65% of men and 35% of women in the composition of the fan population, where the age distribution is shown in Figure 1. What can be seen is that the age of the respondents involved ranges from 18 to 65 years and above, with the majority of respondents being under 44 years old (12 are between 18 and 24 years old; 25% are between 25 and 34 years old; 31% are between 35 and 44 years old)
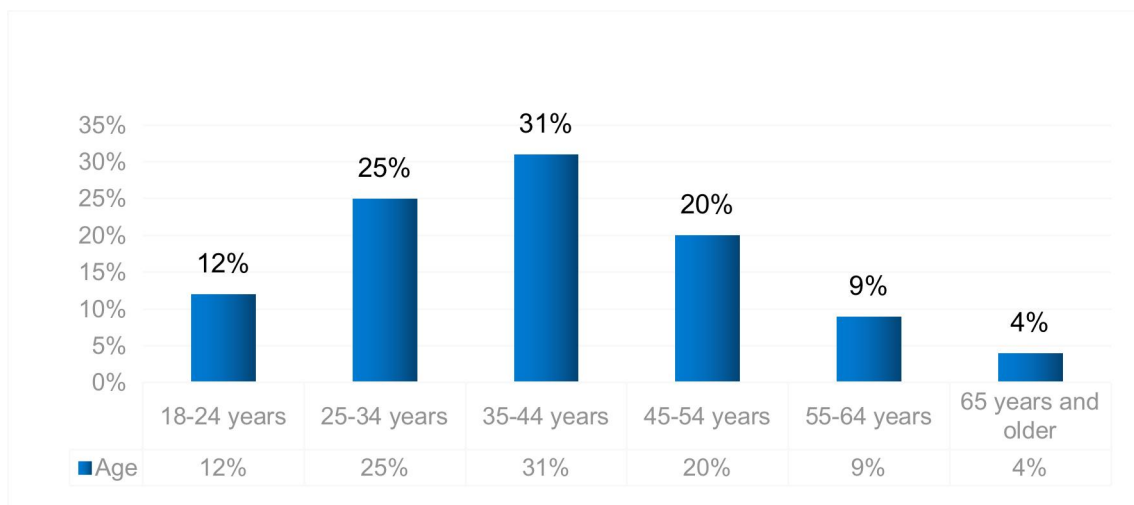
Fig. 1: FC Barcelona fans age distribution percentage（2018/2019）

With regard to the income of the respondents, 19% of them graduated with an average monthly income greater than €6,800, with the majority of them concentrating on €1,100 to €4,100 per month. In addition, less than 10% of the respondents earned less than €1,100, except for 15 students (15%) who were not willing to share their income. Detailed information on income is shown in Figure 2.
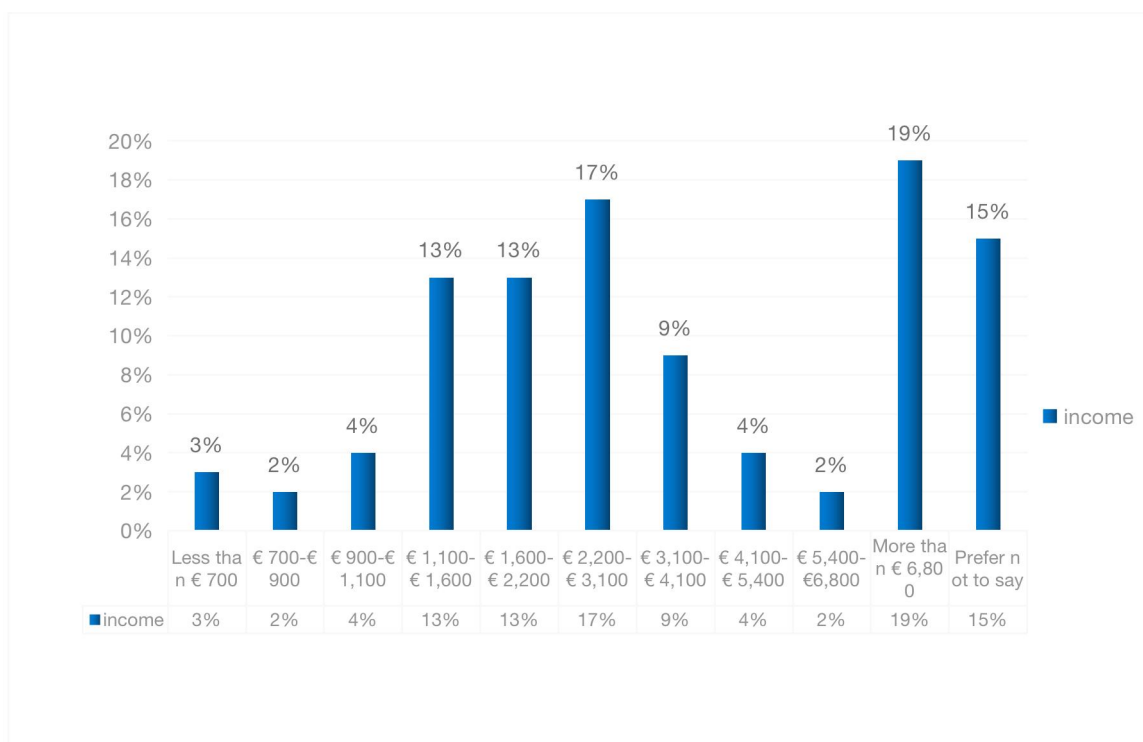
Fig. 2: Average monthly income of FC Barcelona fans (2018/2019)

According to professional data from the Spanish Primera Division, in the 2019/2020 season, FC Barcelona has the highest crowd in the league, averaging around 53,400 spectators per home game, while in second place is its arch-rival, Real Madrid FC, with an average of 45,662 spectators per game, probably due to the size of the venue, with Barcelona's home stadium, Camp Nou Barca's home stadium, Camp Nou, can accommodate a maximum of 99,354 spectators at any one time, while Real Madrid FC's home stadium, the Bernabeu, can accommodate a maximum of 81,044 spectators at any one time. Although there is a difference in stadium size, it still shows that Barça's average attendance outside is above 50% and is the largest in Spain. Figure 3 shows the average home crowd for each team in the Spanish Primera Division for the 2019/2020 season.
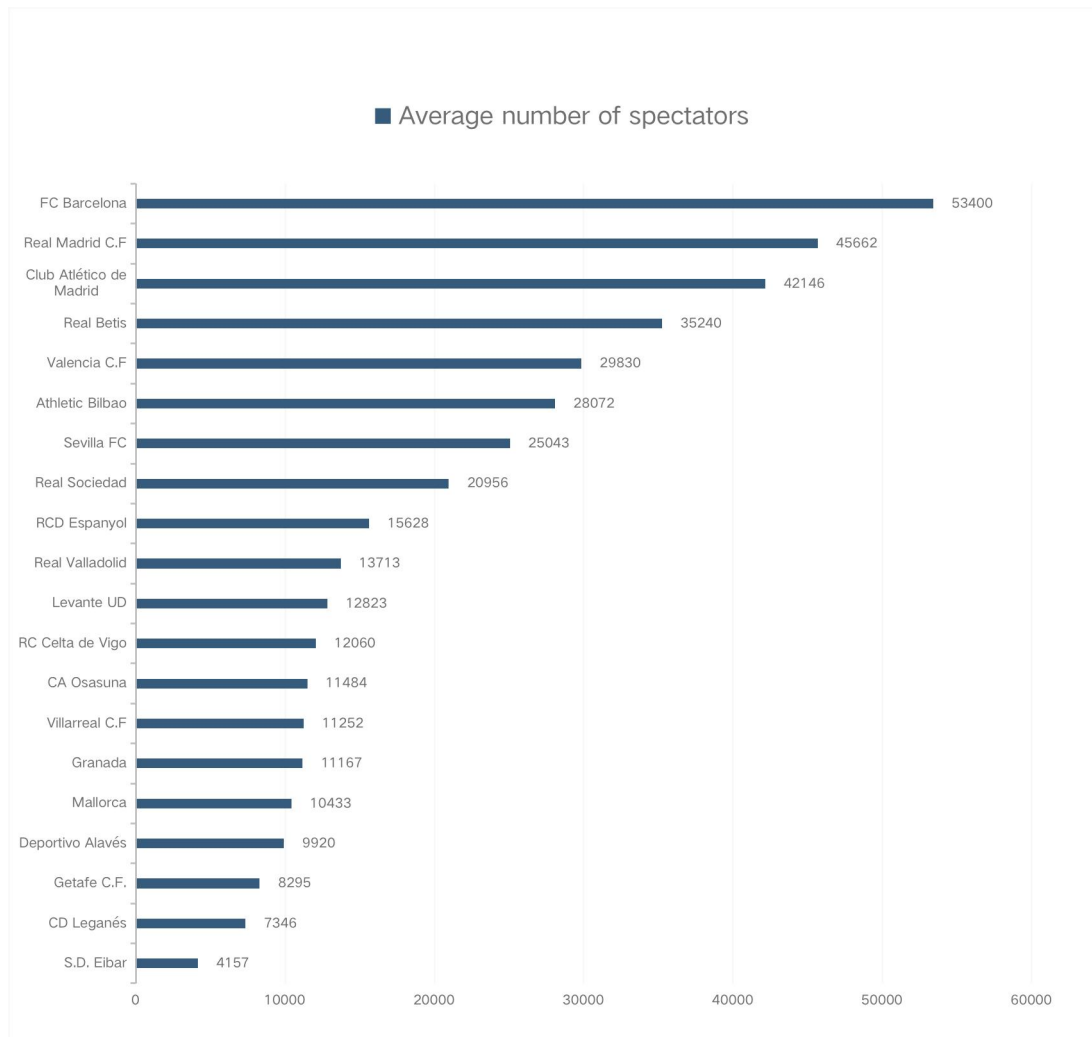
Fig. 3: Average attendance at home maches in Spain´s La Liga in the 2019/2020 season, by team

La Liga, the highest level of professional football in Spain, has seen a declining trend in the percentage of people watching football matches since 2005. On the one hand, due to the rise and prosperity of football leagues in other countries, which attract more entertainment outside of a portion of the audience, the rapid development of smartphones and computers has made people more curious about new things, and with other entertainment activities available instead of football, watching Football matches have become less unique. Another part of the problem is the economic downturn, which has led to people spending more time at work, and the rise in prices has also been a major factor in swaying people from attending football matches. The rise in popularity around 2015 is also since those seasons were the golden age of Spanish football, with FC Barcelona, known as the "Cosmos", and Real Madrid, the "Galacticos", boasting the world's top teams, with their corresponding The leading players, Lionel Messi and Cristiano Ronaldo, became the

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brand of the era and represented the football of the 2110s. But with these two superstars leaving La Liga in 2018 and 2021 respectively, this has led to a massive loss of spectators, which, coupled with the COVID-19 epidemic starting in 2020, has added to the already rapid loss of numbers in La Liga. Figure 4 shows the percentage of respondents watching football matches in Spain between 2000 and 2021.
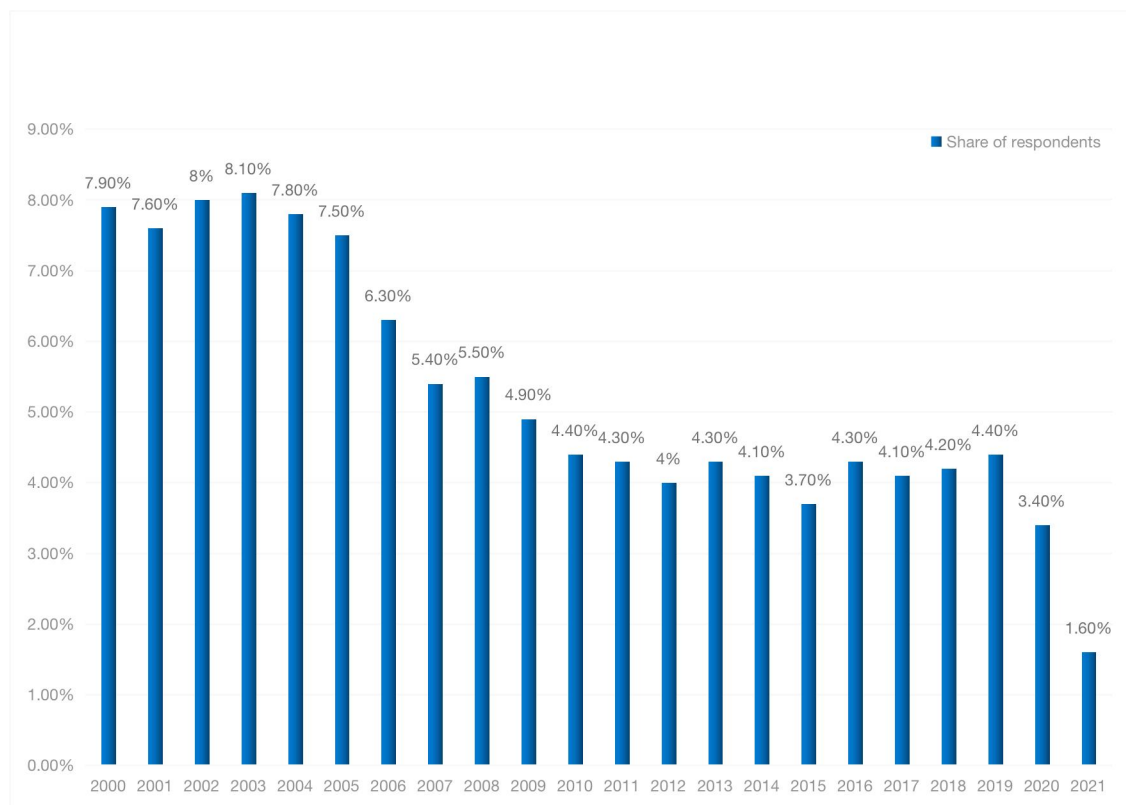
Fig. 4: Figure 4 Share of respondents who attended soccer games in Spain from 2000 to 2021

Due to the impact of the restrictions imposed by the epidemic, FC Barcelona cancelled a number of matches in the 2020/2021 season as well as cancelling offline viewing, which led to an unusual number of live spectators for this season, which we will leave aside for the moment. But the restrictions have varied according to the gradual change of the epidemic, which has gone through a long change from 70% open at the beginning to no restrictions later. According to the official Camp Nou data survey, in the 2021/2022 season, the average number of people attending FC Barcelona home games reached its lowest in more than a decade (excluding the 2020/2021 season, which was affected by the epidemic), at around 50,581, with a total attendance of 606,977 (12 games), which visually illustrates the loss of the club's fans and the seriousness of the impact of the epidemic. The successive departures of Messi, Suarez and Neymar have largely left fans of the 'Cosmos'

frustrated and unhappy with the management's approach to the club, and 5 August 2021 has been the date on which Barcelona bid farewell to Lionel Messi, who has been approaching the Camp Nou vicinity since the announcement. A spontaneous concentration of protests against Messi's departure.
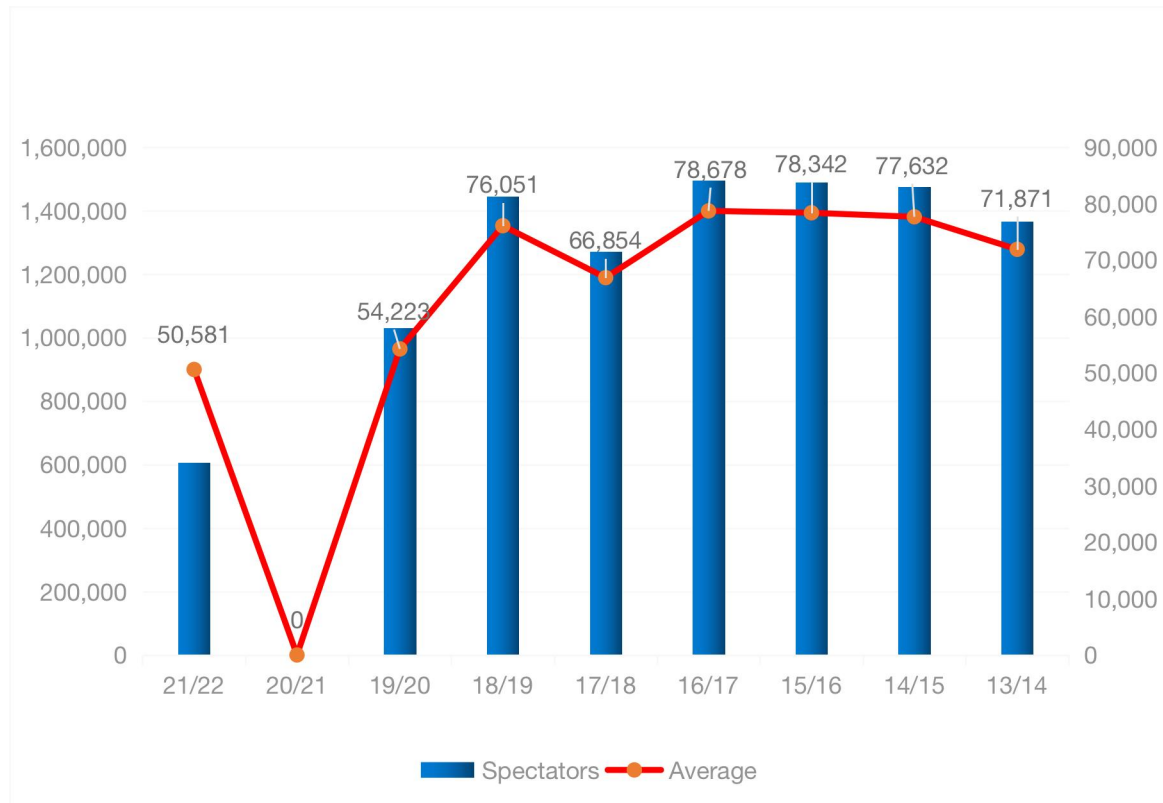
Fig. 5: Total and average audience of FC Barcelona for the 2013-2022 season

Lionel Messi's departure has not only affected Barcelona in sporting terms, but also in economic terms. After the Argentine star left FC Barcelona for FC Paris Saint-Germain, FC Barcelona's brand continues to depreciate in value. As a result, the consultancy firm Brand Finance estimates that Messi's departure will mean that Barcelona will lose up to 11% of its brand value, which today stands at €1.266 billion. This decline will be accompanied by a drop in revenue, a decline in season

ticket sales, merchandise sales ...... With the departure of Lionel Messi, Barcelona will lose 77 million euros in commercial revenue alone. To this should be added the loss of 17 million in match day sales and a 43 million drop in shirt sales, as 80% of the shirts purchased by Barca fans are Messi's. Also, in terms of season ticket sales, there was an estimated drop of 40 million as over 26,000 members left the club this season. Therefore, from the previous 83,500 season ticket holders, the club will now have 57,262. Figure 6 shows the operating income of FC Barcelona from 2010/2011 to 2020/2021 (in millions of euros).

Fig. 6: Opreating revenue of FC Barcelona from 2010/2011 to 2020/2021(in million euros)

2.2. THE COMMITMENT OF FANS

Psychological commitment refers to a tendency to resist change in preference in response to conflicting information or experience(Lawrence A. Crosby and James R. Taylor,1983). And then James(1997) followed Crosby and Taylor (1983) in defining psychological commitment as "the psychological decisions or cognitions that fix or

secure an individual to a particular choice where an individual´s internal state resists changing an attachment to a sport, team, and/or a player in response to conflicting information or experience."Subsequently, also influenced by the work of Crosby and Taylor,Pritchard et al. (1999) operationalized psychological commitment as the tendency to resist changing one´s preference based on the desire to maintain cognitive consistency.The common point they emphasise about psychological commitment is " Resistance to change " .Resistance to change refers to "…individual's unwillingness to change their preferences toward important association with, and/or beliefs about a brand" (Iwasaki & Havits, 2004, p. 50). Thus, the fan's psychological commitment to a team can be defined as a psychological decision or perception that fixes a fan to a team, and fans resist changing their preferences or attachments to that team in response to conflicting information or experiences.

However, research on the multidimensionality of psychological commitment is well established in other fields. O'Reilly, C. A., & Chatman, J. (1986) introduced identification,compliance and iternalization as three components of organizational commitment. Allen & Meyer (1990,1996) identified affective, continuance and normative commitment as the three components of psychological commitment to an organisation. Park (1996, 2000) followed Meyer and Allen's three-component conceptualization of commitment to the attitudinal dimension of loyalty to adult fitness programs. The author introduced three dimensions as affective loyalty,investment loyalty, and normative loyalty.Collectively,these studies outilne a critical role for considering psychological commitment as multidimensional in nature.Mahony, D. F., Madrigal, R., & Howard, D. (2000). Using the psychological commitment to team (PCT) scale to segment sport consumers based on loyalty.Duo Chen (2016) identified fan involvement, product-related attribute associations, non-product-related attribute associations and benefit associations as the four components that influence the psychological commitment of fans of Chinese Super League clubs.Hirotaka Matsuoka(2001) developed the fans' psychological commitment to sports teams scale, including five components—personal identity. affective commitment, calculative commitment, social obligation, and regional tribalism. The purpose of this study is to extend the work of Hirotaka (2001) to create a scale to examine the psychological commitment of Barcelona fans to the club,in order to make further recommendations and draw management insights for managers.

Psychological commitment plays a very significant role in business, especially in branding. Jaskirat Singh Rai; Maher N. Itani; Apar Singh; Amanpreet Singh (2021) aimed to examine the relationship between fans' psychological commitment to the team (PCT) and three outcomes of sponsorship; namely, cognitive (product knowledge), affective (attitudes towards the sponsor) and behavioral (purchase

intention), and found that PCT had a significant effect on cognitive and affective outcomes but a negative or no effect on behavioral outcomes. This means that PCT did not work as a motivating factor and failed to change attendees' purchase intentions. When it comes to consumer decisions, consumers are more likely to make these decisions based on their own life experiences rather than being psychologically attached to their team. Kadir Yağız(2020), investigated the mediating role of league fan identification on the relationship between league brand association and psychological commitment. Six brand association dimensions were identified. This study also found that league fan identification is a key psychological link in the development of league consumers' psychological commitment to sports leagues and mediates the relationship between the brand association and psychological commitment to nostalgia, escapism, and peer acceptance.Ramazan Sanlav; Pero Duygu Dumangöz,(2021), this study aimed to examine the relationship between undergraduates' perceived sports team reputation and their psychological commitment to the team and determine whether these two variables were affected by gender, age, university faculty, fan league membership status, and the team the student supports, based on the results of the study, a positive and significant relationship was found between the variables perceived by university students ($p < 0.05$).These are indicative of the increasing attention being paid to the study of psychological commitment.

3. MODEL CONSTRUCTION AND HYPOTHESIS FORMULATION

3.1. RESEARCH IDEAS

Inspired by previous scholarly research models on sports fans' loyalty, this study introduces different dimensions of influences on fans' psychological commitment to a specific team from different perspectives, while building on existing research on fans' psychological commitment, different dimensions of influences are introduced into the conceptual model used to investigate the factors influencing fans' psychological commitment to a specific team.

3.2. RESEARCH MODEL

Although a number of scholars have explored the factors influencing fans' psychological commitment, there is still much room for exploration. For example, Stavros Tachis and George Tzetzis (2015) only discuss the influence of the dimensions 'Attraction', 'Centrality' and 'Self -Expression' on psychological commitment, but not on the influence of location, social responsibility, etc.Hirotaka (2001) developed a scale of fans' psychological commitment to sports teams, but did not apply it in practice.

In this paper, based on previous scholars' research on fans' psychological commitment, six dependent variables and one outcome variable were introduced to explore their effects on fans' psychological commitment, and a conceptual model of fans' psychological commitment at FC Barcelona was proposed, taking into account the daily behaviour of fans and the characteristics of their favourite teams. (as shown in Figure 3-1).
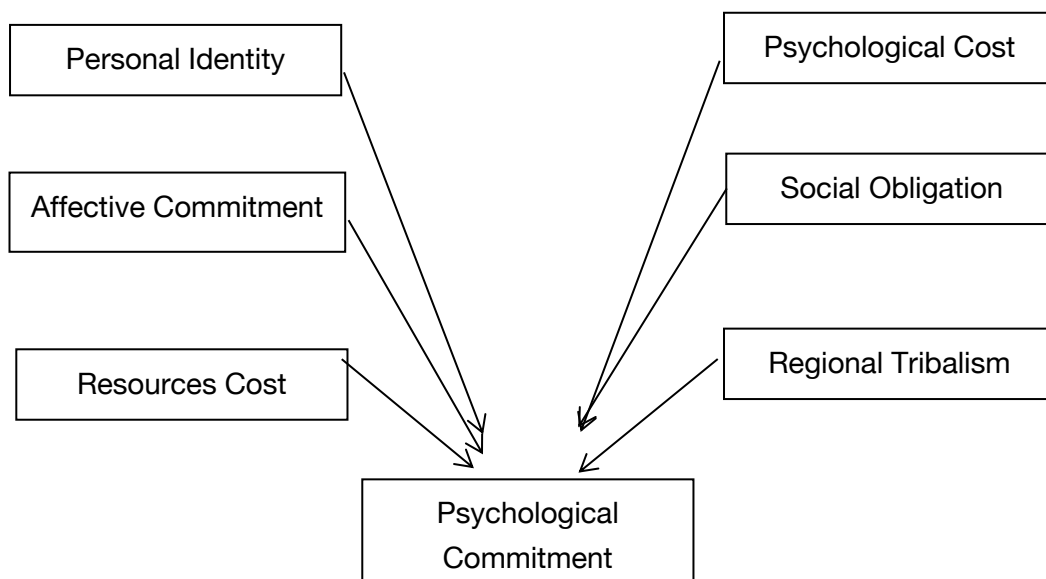
Fig. 6: Conceptual model of fans' psychological commitment at FC Barcelona

3.3. RESEARCH HYPOTHESIS

3.3.1. Hypotheses related to personal identity

Identification is defined as the "perceived oneness with or belongingness to an organization" of which the person is a member (Bhattacharya, Rao, & Glynn 1995),and a fan who is psychologically committed to a team may have a feeling that he or she shares "a common destiny and experiencing its successes and failure" (Mael & Ashforth 1992). Mahony (1995) defines team identification as the "degree to which the fan's relationship with the team contributes to their social identity" as well.

In addition,different scholars have also given different approaches to the measurement of personal identity.Pritchard, Havitz, and Howard (1999) thought that "self images perceived in any public association with a brand (social self) would be personally evaluated to see if they are truly consistent with the consumer's internal views (personal self)".Iwasaki and Havitz (1998) use the label sign to refer to "the unspoken statements that purchase or participation conveys about the person".

A large part of consumers' psychological attachment to a product is due to the value of its signs and symbols, so for fans who have a psychological commitment to a sports team, they are more likely to express their own personal identity, which are often expressed through a sense of belonging and consistency.

This leads to the following hypotheses:

H1:Personal Identity has a positive effect on fans' psychological commitment.

H1a:Consistency has a positive effect on fans' psychological commitment.

H2a:Belonging has a positive effect on fans' psychological commitment.

3.3.2. Hypotheses related to Affective Commitment

One of the three components of Allen & Meyer's (1990, 1996) psychological commitment to an organization mentioned earlier is "affective" which they define as "identification with, involvement in, and emotional attachment to the organization." and they explain employees with strong affective commitment remain with the organization because they want to do so. Heere, B., & Dickson, G. (2008) noted that current marketing research on attitudinal constructs such as commitment and loyalty is characterized by conceptual confusion and overlap. Mahony, Madrigal & Howard(2000) defined "affective commitment" as the strength of fans' attitudinal loyalty or psychological commitment to a particular sport team and the concept of linking affective commitment to loyalty has also been proposed in previous studies, Dick and Basu (1994) introduced "affective commitment" as one of the basis of relative attitude of customer loyalty. Park (1996) defined affective loyalty as "a psychological attachment caused by an individual's desire to continue a particular program through affective attachment to an identification with the program".

In addition, many scholars have highlighted the importance of investigating affective commitment. Mercurio(2015) suggested that affective commitment as a construct is a possible core of organizational commitment and could prove to be an important area of focus for future research and practical application. Kim,James,& Kim (2013) highlighted the key drivers of sport consumer behaviors are affective commitment, continuance commitment, and/or normative commitment.

This leads to the following hypothesis:

H2:Affective Commitment has a positive effect on fans' psychological commitment.

3.3.3. Hypotheses related to Resources Cost and Psychological Costs

Continuance commitment is the second component of Meyer and Allen's (1990, 1996) model of multidimensional organizational commitment and it´s a commitment based on the employee's; recognition of the cost associated with leaving the organization. Employees with strong continuance commitment, then, remain with the organization because they have to do so" (Allen & Meyer, 1996). Mathieu & Zajac (1990) also named continuance commitment as calculative commitment. Hirotaka (2001) defines calculative commitment as one of five dimensions first, but after his research study he was dividing calculative commitment into two dimensions, one being resource cost and the other being psychological cost, and this paper continues his final setting. Mathieu & Zajac (1990) defined calculative commitment as "commitment based on the employee's recognition of the cost associated with leaving the organization."Suliman & Iles (2000) refer continuance commitment as a sense of commitment out of a sense of perceiving few alternatives or options or due to a feeling that the sacrifices involved in leaving would outweigh the benefits. The majority of scholars agree that continuance commitment stems from two sources—personal sacrifice including switching costs and sunk costs and lack of alternatives (McGee & Ford, 1987; Meyer & Allen, 1997; Iverson & Buttigieg, 1999).Moreover, Khan, Bashir, Nasim & Ahmad (2021) suggest that continuance commitment antecedents arise from two sources: alternatives and investment. Investment sources include invested time, invested money, and invested effortnthat employees spend with the passage of time and during their job tenure.They also explained that employees with strong continuance commitment think in terms of these investments before leaving that they have made in the organization.

Hirotaka(2001) showed that the calculative commitment could be split into two separate costs—resources cost and psychological cost and he defined resources refer to monetary expenditures as well as investments of one's time and effort in support of the team and the psychological costs refer to what is felt by the individual internally .Before that, he defined calculative commitment as a commitment based on the monetary and psychological costs of leaving the team. He proved through his research that the six-component model with two kinds of costs was appropriate.The final version of the scale had 30 items to measure the six components of psychological commitment. The scale was named the Scale of Psychological Commitment to Sport Team (SPCST).

Thompson and Cats-Baril (2002) describe switching costs as "the costs of switching suppliers," while Farrell and Klemperer (2007) write that "a buyer faces a switching cost between sellers when a new seller has to repeat an investment unique to his

current seller."Switching costs refers to the monetary and psychological costs involved in switching from one service provider to another (Porter, 1980; de Ruyter, Wetzels, & Bloemer, 1997).They explain that consumers tend to be more loyal before facing a service industry with high switching costs than a service industry with low switching costs, and that a characteristic of a service industry with high switching costs is that it has fewer competitors, based on which it is reasonable to infer that sports teams have higher switching costs because there are a small number of elite sports teams.

In economics and business decision-making, a sunk cost (also known as retrospective cost) is a cost that has already been incurred and cannot be recovered (Mankiw, N. Gregory, 2009).Sunk cost investment makes investors think more about what they are paying for.The sunk cost effect is manifested in "a greater tendency to continue an endeavor once an investment in money, effort, or time has been made"(Arkes and Blumer, 1985). Evidence that the psychological justification for this behavior is predicated on the desire not to appear wasteful is presented. In a study of Arkes and Blumer (1985), customers who had initially paid more for a season subscription to a theater series attended more plays during the next 6 months, presumably because of their higher sunk cost in the season tickets.Similarly, in sports, one of the reasons fans continue to watch games or continue to be fans of a sports team is that they buy season tickets for their club or sports team and act out of a desire not to waste them.

Someone who is a fan of a sports team or club is able to invest in it both in terms of resources, i.e. resources such as money and time invested, and in terms of psychological costs, i.e. attachment and love for the team, and a corresponding commitment to a team is also a psychological investment. On the other hand, if a fan may maintain a close relationship or have a certain psychological commitment to a team, because he or she has invested in this commitment, both in terms of money and psychologically.The size of the psychological investment is often proportional to the amount of time and effort one spends on commitment to the team.

This leads to the following hypothesis:

H3:Resource Costs have a positive impact on fans' psychological commitment.

H4:Psychological Cost has a positive effect on fans' psychological commitment.

3.3.4. Hypotheses related to Social Obligation

Normative commitment is the third component of organisational commitment proposed by Meyer and Allen (1991, 1997), which refers to "commitment based on a sense of obligation to the organization.Hirotaka (2001) in his study labels normative commitment as social responsibility. Park (1996) defined normative loyalty as "a participant's awareness of social expectation or normative pressure from significant or relevant others".Although there is no common definition of normative commitment, Meyer and Allen (1991) noted that they reflected a common theme of obligation. Given a general agreement that this sense of obligation derives from the internalization of normative influences, they adopted the term "normative commitment."(Meyer & Parfyonova , 2010).The normative commitment also applies to fans to teams, where a fan may be willing to support the same team because his or her family and friends all support that team. For example, if you are a fan of FC Barcelona, it is partly because your family or friends are also fans of the team.Koch & Wann (2013) found that socialized fans reported higher levels of social obligation and regional tribalism to their teams than self-selected fans. In addition, Kahle, Kambara, and Rose (1996) suggested that obligation is one of the critical motivational factors for fan attendance.

This leads to the following hypothesis:

H5:Social Obligation has a positive effect on the psychological commitment of fans.

3.3.5. Hypotheses related to Regional Tribalism

The origins of football clubs are steeped in regional symbolism.Giulianotti (1999) suggested that the earliest football matches were played between different communities and a large number of clubs were founded with the name of the region added to the club name to express their identity as representatives of their community. This geographical and historical significance made them representative of their community and few clubs were willing to change the location of the stadium which was important to their heritage. In addition to the fact that football culture is taught to the individual in the community as a child, the community service of the local club and the regional symbolic football atmosphere created by family and friends in the community leave a lasting impression on children as they grow up, and Jones(1997) found that British fans chose their favourite club primarily on the basis

of the city club in which they now live and the city club in which the fan originally lived.

Wakefield & Sloan (1995) suggest that any community activity that increases opportunities for player and spectator contact has the potential to increase team loyalty. Accordingly, the community's contribution to the club is significant. For one thing, the spending of community fans is an important component of club sales, with local fan facilities such as fan restaurants and movie theatres being a major consumer of local community fans.Edensor's (2008) research shows that arenas and training facilities are fixed assets and that the support of local fans determines the club's weekly income. Secondly, although there are fans who travel from out of town to watch the club play at home, the majority of fans are still local fans, creating the atmosphere at the ground and dominating the culture in the stands. This means that not only does the club's connection with the community give fans life and psychological satisfaction, but the process enables the club to gain long-term momentum through fan support.

This leads to the following hypothese:

H6:Regional Tribalism has a positive effect on the psychological commitment of fans.

H6a:Regional Identity has a positive effect on fans' psychological commitment.

H6b:Regional Glory has a positive effect on fans' psychological commitment.

4. METHOD

4.1 FOCUS GROUP

In order to conduct a better research and also to obtain the characteristics of the FC Barcelona audience. Therefore, the focus group was necessary because it was designed to identify the factors that influence the psychological commitment of FC Barcelona fans.

The questions of the questionnaire were open-ended and there were no specific options to choose from. The participants were asked about the frequency of their participation in sports activities, the teams they support, the frequency of attending

matches on site and various factors that would influence their heart commitment towards their favorite team.

The questionnaire was administered at the Faculty of Economics and Business of the University of Barcelona, which has the highest number of young people in Barcelona and the highest percentage of people who participate in sports. The questionnaire was distributed on April 1st, 2022, at 9 am in front of the Faculty of Economics and Business of the University of Barcelona, where we explained to the participants who we were, the purpose of the study and the instructions for completing the questionnaire. With the help of the students of the Faculty of Economics and Business of the University of Barcelona, we managed to collect 67 valid questionnaires at 15:00 on April 1, 2022, from the Barcelona area and the surrounding towns. Among them, 36 people (18 males and 18 females) were interviewed in detail. 36 people (18 males and 18 females) said that they are fans of FC Barcelona, that they play sports at least 2 times a week, most of the males play more than 4 times a week, and that they go to Barcelona matches at a frequency of 1 or 2 times a month, but the price of the tickets, the time of the day, the opponent.Finally they also gave us some information that would influence them to give up being fans of the club as well as affect their heart commitment.

Based on the findings of the focus groups and previous research studies, six motivations were extracted from this study, which are personal identity, perfect commitment, resource cost, psychological cost, social obligation and regional tribalism.

4.2. SCALE DEVELOPMENT

The items for each factor were generated from previous scales. In addition to personal identity (6 items) and regional tribalism (6 items), emotional commitment, resource cost, psychological cost and social obligation each contained 4 items and psychological commitment contained 3 items. each of the 7 dimensions was assessed on a 7-point Likert scale. Likert scale (1=strongly disagree, 7=strongly agree).

Since the previous scales were in English, the English version of the scale (7 dimensions, 31 items) was translated into Spanish by the authors, who then submitted the translated scale to Dr. Mel Solé Moro, a full professor at the School of Economics and Business at the University of Barcelona, for review and examination. After final revisions, the authors, Dr. Mel Solé Moro, and fellow Spanish students in sports management discussed and decided on the final version of the wording was discussed and decided upon by the author and Dr. Mel Solé Moro, together with

fellow Spanish students in the Sports Management program. The final version is consistent with the English version.

4.3. INSTRUMENT

For the purpose of the study, a small survey was first conducted in advance at Barcelona's home stadium, Camp Nou. A total of 20 Barcelona fans (10 males and 10 females) were selected for the survey before the match on March 13, 2022 (Barcelona vs. Osasuna), and the main sections of the survey were "demographic information", "experience ", "psychological commitment" and "intention to continue following the team in the future".

In the demographic section, participants were asked to provide their personal information, such as gender, age, educational background and income.

For the purpose of this study, experience refers to the spectators' past attendance and their sports experience. Participants were asked whether they were fans of FC Barcelona, whether they had experience playing football, the type of tickets they usually held, and their travel time from home to the stadium.

Next, participants were asked about how often they had watched football in the past, including attendance at home games, how often they watched games on TV, how often they talked to friends about club information, how much they spent for the team both monetarily and mentally, their own feelings about the team and the team's place in their hearts, etc.

Finally, they were asked if they would continue to follow the team as a fan, how likely they were to continue to watch the team live or on TV, what factors influenced their psychological commitment to the team, and what could influence them to give up their Barça fan status.

4.4. PARTICIPANTS AND DATA COLLECTION

Data were collected outside each stadium before the games on April 3, 2022 (Barcelona vs. Sevilla) and April 18, 2022 (Barcelona vs. Cádiz). For each game, eight friends of the author helped the author to distribute the questionnaire together. They were told the purpose of the data collection and trained to distribute and collect questionnaires. Only ticket holders and fans who wear Barcelona jersey were targeted to participate. During the first game, 134 questionnaires were distributed

and 109 (81.3%) of them were collected; 120 questionnaires were distributed during the second game and 102 (85.0%) of them were returned. In all, 254 questionnaires were collected in the two games, and 211 (83.1%) of them were fully completed. This procedure yielded a final sample of 211 valid respondents.

5. EMPIRICAL STATISTICAL ANALYSIS

5.1. DESCRIPTIVE STATISTICAL ANALYSIS

5.1.1. Demographic analysis

After data collection, the 211 valid questionnaires were collated via Excel and demographic analysis was carried out using SPSS 27.0 on seven items of basic information about the participants such as gender, age, education level, monthly income, length of time as a Barça fan, whether they hold a season ticket and frequency of playing football. The statistical results showed that there were no missing values. The specific information is as follows:

5.1.1.1. Gender distribution of the sample

Table 5-1:Gender distribution of the sample (n = 211)

Variable	Categories	n	%
Gender	Male	166	78.7
	Female	45	21.3

Statistics at the gender level show that there were far more men than women among the respondents, with 166 men accounting for 78.7% of the total, compared to 45 women, or 21.3%. This is because the composition of football fans is mainly male, so the proportion of the sample can better reflect the gender ratio of fans in general.

5.1.1.2. Age distribution of the sample

Table 5-2: Age distribution of the sample (n = 211)

Variable	Categories	n	%
Age(M=38.17)	18~28	41	19.4
	29~39	96	45.6
	40~50	44	20.1
	51~61	13	6.2

62 or more	17	8.7	

At the age level, statistics show that the majority of the respondents were between the ages of 29 and 39, with 96 people, or 45.6%, while the proportion of those aged 51 and above was low, with 30 people, or 14.9%, and the distribution of the sample was mainly young and middle-aged, in line with the age distribution of the football fan base.

5.1.1.3. Education distribution of the sample

Table 5-3: Education distribution of the sample (n = 211)

Variable	Categories	n	%
	Middle School	6	2.8
	High School	31	14.7
Education	Bachelor	116	55.0
	Master	39	18.5
	Doctor	19	9.0

In terms of education, the majority of respondents had a bachelor's degree at 116 (55%), followed by 58 (27.5%) with a postgraduate degree or higher, and only six (2.8%) with a junior high school degree. This proportion is very consistent with the population surveyed, as the respondents are mostly young and middle-aged and Catalonia has a high level of access to education due to the large number and reputation of its universities.

5.1.1.4. Income distribution of the sample

Table 5-4: Income distribution of the sample (n = 211)

Variable	Categories	n	%
	0 ~ 999 euros	9	4.3
	1000 ~ 1999 euros	24	11.4
Income(1 month)	2000 ~ 2999 euros	78	37.0
	3000 ~ 3999 euros	51	24.2
	4000 euros or more	49	23.1

In terms of income, 33 people (15.7%) earned less than €1999 per month; 78 people (37%) earned between €2000 and €2999 per month as the majority; and 49 people

(23.1%) earned more than €4000 per month. This income ratio is in line with the average for the local population, as there are some who are still students, have just started working or are not well paid.

5.1.1.5. Time to become a Barça fan distribution of the sample

Table 5-5: Time to become a Barça fan distribution of the sample (n = 211)

Variable	Categories	n	%
	Less than 1 year	12	5.7
	1 ~ 3 years	13	6.2
Time to become a Barça fan	3 ~ 5 years	18	8.5
	5 ~ 10 years	25	11.8
	More than 10 years	143	67.8

After counting the 211 valid questionnaires collected, the time statistics of being a Barça fan among the respondents showed that the vast majority were fans for more than 10 years, with 143 people, a whopping 67.8%; there were also 25 fans for 5 to 10 years, accounting for 11.8%; likewise there were 12 people who had just joined Barça fans not long ago, accounting for 5.7%. This percentage is not surprising, as we collected the questionnaires in front of the home of FC Barcelona, and also purposefully looked for Barca fans to conduct the survey, and over the last decade, FC Barcelona has attracted a large number of fans through its strength, including many loyal fans of more than 10 years.

5.1.1.6. Own a season ticket distribution of the sample

Table 5-6: Own a season ticket distribution of the sample (n = 211)

Variable	Categories	n	%
Own a season ticket	Yes	85	40.3
	No	126	59.7

As can be seen from the table above, out of the 211 respondents, 85 are in possession of FC Barcelona season tickets for the current season, which is 40.3%, a very high percentage among the major clubs. The remaining 126 are probably students and admiring fans, as not everyone can afford to pay the price of a season ticket and at the same time have a lot of time to go to matches. So a 40% season ticket ownership rate highlights the club's strong fan base and loyalty.

5.1.1.7. Playing experience distribution of the sample

Table 5-7:Playing experience distribution of the sample (n = 211)

Variable	Categories	n	%
	Often play football right now	71	33.6
Playing experience	Used to play football	73	34.6
	Only play football sometimes	26	12.3
	Never play football	41	19.5

In terms of experience of playing football, the majority of those who play football regularly now and those who used to play football often are similar in number, 71 and 73 respectively, accounting for 33.6% and 34.6%; and 41 people have never played football before, accounting for 19.5%. This means that nearly 70% of the fans have had a lot of experience playing football, but due to work, study and family commitments, they do not always have enough time to play regularly, which is in line with the sport-loving nature of the football fan base.

5.1.2. Descriptive statistical analysis

In this paper, based on the scale and questionnaire data, a 7-point Likert scale was used and the corresponding scores were assigned, followed by descriptive statistical analysis of the 7 specific dimensions such as personal identity, affective commitment, resources cost, psychological cost, social obligation, regional tribalism and psychological commitment using software tools such as SPSS 27.0. The means and standard deviations of the variables were first counted, as shown in Tables 5-8:

Table 5-8: Mean and Std.Deviation of the variables

Variables	Items	Mean	Std.Deviation
Personal Identity	6	5.3112	0.85421
Affective Commitment	4	5.9893	0.76893

Resources Cost	4	5.0853	0.99783
Psychological Cost	4	5.5296	0.86115
Social Obligation	4	4.2784	1.01789
Regional Tribalism	6	4.9945	1.98689
Psychological Commitment	3	5.0395	1.07251

After statistical analysis, the data show that the mean values for each dimension are concentrated between 4.0 and 6.0, with the three variables of personal identity, affective commitment and psychological cost having a higher mean value of 5.3 or more; the three variables of resource cost, regional tribalism and psychological commitment having a mean value of around 4.9 to 5.0;and the mean value of social obligation is the lowest among the variables, but it is also higher than 4.0.

In summary, the data indicators for each dimension are within reasonable limits, in line with the reference standards.

5.2. RELIABILITY AND VALIDITY TESTS

5.2.1. Reliability tests

Good reliability is the basis for further data analysis. The most common type of reliability analysis is the alpha coefficient, which is the internal consistency coefficient. The method is to use SPSS to calculate the Cronbach's alpha coefficient and use this value to determine the level of confidence if it is within the required range.

If the data collected is of poor confidence, it means that the results of the survey are not reliable, the data are not stable and the reliability is low. In this case, it is difficult to obtain accurate empirical findings to validate the conceptual models and related hypotheses. Therefore, good reliability ensures the quality of the data collected and is the basis for further statistical analysis. The specific reliability coefficients are shown in Table 5-9.

Table 5-9: The Cronbach´s Alpha Value

No	Coefficient of Cronbach´s Alpha	Reliability Level
1	More than 0.90	Excellent

2	0.80-0.89	Good
3	0.70-0.79	Acceptable
4	0.60-0.69	Questionalbe
5	0.50-0.59	Poor
6	Less than 0.59	Unacceptable

In testing the reliability of the questionnaire, the overall reliability of the questionnaire was first tested and the results of the reliability of the test data are shown in Table 5-10.

Table 5-10: Cronbach´s Alpha confidence analysis of the total scale

Cronbach´s Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.907	0.926	31

According to the data, the Cronbach´s Alpha for the overall questionnaire was 0.907 and the Cronbach´s Alpha based on standardized items was 0.926, indicating that the overall reliability rating of the questionnaire was excellent and the data reliability was fully achieved. Subsequently, the authors also conducted reliability tests on the seven dimensions of the questionnaire and the results of each dimension are shown in Tables 5-11:

Table 5-11: Results of the confidence test for each variable

Variable type	Specific dimensions	N of Items	Cronbach´s Alpha	Reference values
Independent variables	Personal Identity	6	0.914	>0.9
	Affective Commitment	4	0.891	0.80-0.89
	Resources Cost	4	0.872	0.80-0.89
	Psychological Cost	4	0.875	0.80-0.89
	Social Obligation	4	0.742	0.70-0.79
	Regional Tribalism	6	0.976	>0.9
Outcome variables	Psychological Commitment	3	0.943	>0.9

The results from the data in the table above show that the Cronbach´s Alpha coefficients for the specific dimensions of all the independent and outcome variables are within the desired range. With the exception of the dimension "social obligation", the Cronbach´s Alpha coefficients for all dimensions are above 0.8, which is a very good confidence level. The Cronbach´s Alpha coefficients for "social obligation" also ranged from 0.7 to 0.8, with good consistency. The results of the

reliability test indicate that the overall and all dimensions have good reliability, reflecting the good consistency of the questionnaire items, and are ready for further empirical analysis.

5.2.2. Validity tests

Currently, validity measures commonly used in academia focus on both content validity and construct validity. The scales used in this study are based on established scales from existing research, and in addition, no significant problems were found in the analysis of the results of a small pre-test before the questionnaire was formally administered. In addition, no significant problems were found in the analysis of the results of the small-scale pre-experiment conducted prior to the formal administration of the questionnaire, and therefore the content validity was relatively reliable.

Structural validity can be tested through convergent validity. In this study, after constructing a theoretical model of the psychological commitment of FC Barcelona fans and formulating relevant hypotheses, the data was analysed by validated factor analysis (CFA) using the AMOS 23.0 software tool to measure the convergent validity of the data. Table 5-12 shows:

Table 5-12: Results of the validity test for each variable

Variables	Measurement items	Factor Loadings	CR	AVE
Personal Identity	I am personally hurt when someone criticizes the team.	0.729	0.915	0.645
	The team's successes are my successes.	0.795		
	When someone praises the team, it feels like a personal compliment.	0.757		
	I get upset when the media blame the team.	0.739		
	In general, belonging to the team is an important part of myself.	0.887		
	The team is an important reflection of who I am.	0.895		
Affective Commitment	I really love the team.	0.879	0.892	0.674
	I have a strong affection for the team.	0.830		

	I am a devoted fan of the team.	0.820		
	I am glad to be a fan of the team.	0.750		
Resources Cost	I would not quit being a fan of the team because I have invested so much money to express my attachment to the team.	0.772	0.876	0.641
	I have invested so much time and energy to support the team that I can not quit now.	0.721		
	Too much of my life would be disrupted if I stopped being a fan of the team.	0.800		
	It would be troublesome to switch my commitment to another team.	0.898		
Psychological Cost	It would be psychologically hard to switch my attachment to another team.	0.841	0.877	0.641
	It would be very stressful for me to openly discontinue my association with the team.	0.817		
	I would not quit being a fan of the team because I have openly expressed my commitment to the team.	0.699		
	I continue to be a fan of the team because I have already put so much of myself into the team.	0.837		
Social Obligation	My attachment to the team is based on a sense of social obligation.	0.365	0.689	0.383
	I am a fan of the team because my friends and/or family members expect me to.	0.407		
	I would not quit being a fan of the team because of my sense of obligation to the other fans.	0.725		
	I am a fan of the team because it is the right thing to do.	0.840		
Regional Tribalism	I am a fan of the team because it represents my hometown or university well.	0.946	0.976	0.874
	Supporting the team helps me to express my pride in my hometown or university.	0.937		
	I am a fan of the team because it is an important connection between me and my	0.920		

	hometown or university.			
	I continue to be a fan of the team because of my allegiance to my hometown or university.	0.936		
	I am a fan of the team because it is symbolic of my hometown or university.	0.933		
	I support the team because it is located in my hometown or university.	0.936		
Psychological Commitment	I feel a deep and intrinsic attachment to my favourite club, which has remained constant over time.	0.955	0.944	0.849
	I think I have a strong psychological commitment to the team.	0.896		
	Loyalty to the team will not diminish even if there is a long-term decline in the team's athleticism and performance on the field.	0.912		

From the above table, it can be seen that, with the exception of two items in the "social obligation", "My attachment to the team is based on a sense of social obligation" and "I am a fan of the team because my friends and/or family members expect me to" have factor loadings of 0.365 and 0.407.Considering that the coefficients for these two questions are probably low because they are reverse questions.But the coefficients of all the other variables were greater than 0.5, and the combined reliability (CR) of all variables except "social obligation" was greater than 0.8; the average variance extracted (AVE) was greater than 0.5, meeting the three criteria for determining convergent validity (Fornell & Lacker, 1981). Therefore, the variables in this paper have good convergent validity.Figure 5-1 shows the structural equation model designed in AMOS.
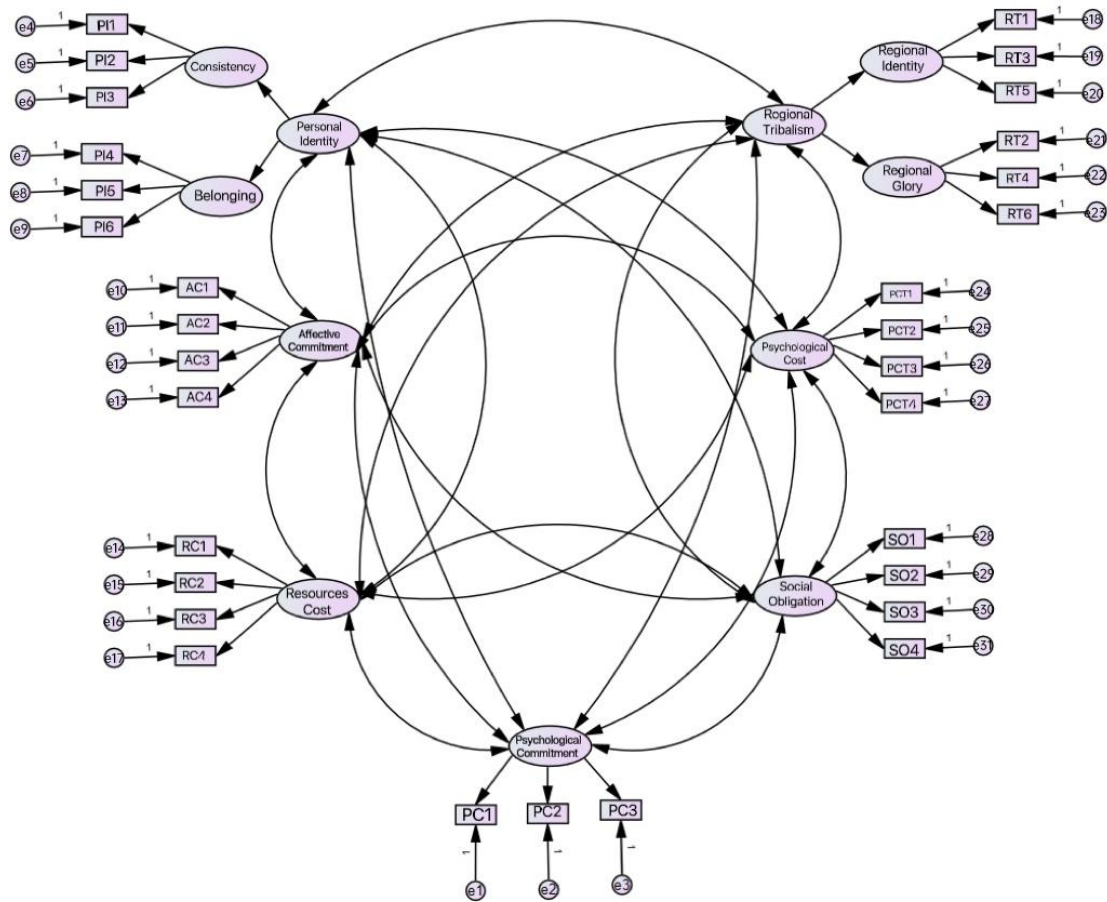
Fig.5-1: Structural equation model

In terms of discriminant validity, this study used the Perason test with SPSS 27.0 to test for correlations or differences between the variables.The data shows that the correlation coefficients for all variables ranged from -0.137 to 0.690, except for the correlation coefficient of 0.732 for "Affective Commitment"and "Psychological Commitment ".This indicates that the discriminant validity of the variables measured in this study is good and suitable for further analysis, as shown in Tables 5-13.

Table 5-13: Pearson Correlations

		PI	AC	RC	PC	SO	RT	W
PI	Pearson Correlation	--						
	N	211						
AC	Pearson Correlation	0.604	--					

	Sig. (2-tailed)							
	N	211	211					
RC	Pearson Correlation	0.690	0.507	--				
	Sig. (2-tailed)							
	N	211	211	211				
PC	Pearson Correlation	0.668	0.574	0.685	--			
	Sig. (2-tailed)							
	N	211	211	211	211			
SO	Pearson Correlation	0.040	-0.121	0.245	0.000	--		
	Sig. (2-tailed)							
	N	211	211	211	211	211		
RT	Pearson Correlation	0.098	0.127	0.097	0.183	0.044	--	
	Sig. (2-tailed)							
	N	211	211	211	211	211	211	
W	Pearson Correlation	0.589	0.732	0.508	0.551	-0.137	0.049	--
	Sig. (2-tailed)							
	N	211	211	211	211	211	211	211

5.3. T-TEST AND VARIANCE TEST

In order to measure the effects of control variables such as demographic variables on other variables, t-tests and variance tests were used to examine the effects of seven control variables such as gender, age, education, income, time spent as a Barça fan, season ticket ownership and frequency of playing football on other variables.

5.3.1. Gender Independent samples t-test for each variable

Table 5-14: Independent Samples Test

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
									Lower	Upper
PC	Equal variances assumed	0.173	0.678	2.286	209	0.023	0.40799	0.17847	0.05616	0.75981
	Equal variances not assumed			2.237	67.746	0.029	0.40799	0.18242	0.04396	0.77202
PI	Equal variances assumed	4.646	0.032	2.422	209	0.016	0.34380	0.14193	0.06400	0.62359
	Equal variances not assumed			2.231	63.036	0.029	0.34380	0.15409	0.03587	0.65173
RT	Equal variances assumed	0.073	0.787	-0.105	209	0.916	-0.03527	0.33472	-0.69513	0.62458
	Equal variances not assumed			-0.105	69.407	0.917	-0.03527	0.33585	-0.70521	0.63466
AC	Equal variances assumed	0.422	0.517	1.650	209	0.100	0.21242	0.12870	-0.04131	0.46614

		F	Sig	t	df	Sig (2-tailed)	Mean Difference	Std Error Difference	Lower	Upper
	Equal variances not assumed			1.686	71.806	0.096	0.21242	0.12599	-0.03875	0.46358
RC	Equal variances assumed	2.600	0.108	2.225	209	0.027	0.36971	0.16615	0.04218	0.69725
	Equal variances not assumed			2.010	61.717	0.049	0.36971	0.18393	0.00201	0.73741
PCT	Equal variances assumed	3.362	0.068	1.632	209	0.104	0.23537	0.14423	-0.04895	0.51970
	Equal variances not assumed			1.463	61.203	0.149	0.23537	0.16094	-0.08642	0.55717
SO	Equal variances assumed	0.634	0.427	-2.331	209	0.021	-0.39461	0.16929	-0.72836	-0.06087
	Equal variances not assumed			-2.167	63.691	0.034	-0.39461	0.18213	-0.75848	-0.03074

(PC=Psychological Commitment,PI=Personal Identity,AC=Affective Commitment,RT=Regional Tribalism,PCT=Psychological Cost,SO=Social Obligation,RT=Regional Tribalism)

The effects of gender on the other variables were t-tested using SPSS statistical software. As shown in Table 5-14, the two-sided significance of gender for Psychological Commitment,Personal Identity, Resources Cost and Social Obligation was less than 0.05 and the two-sided significance of gender for all other variables was greater than 0.05, so there was a significant difference in the effect of gender on the four variables of Psychological Commitment,Personal Identity, Resources Cost and Social Obligation.

5.3.2. Variance test for age on each variable

Table 5-15: Results of the variance test for the variables of Age

Variables	F	Sig.
Personal Identity	1.124	0.298
Affective Commitment	1.302	0.125
Resources Cost	1.448	0.054
Psychological Cost	1.400	0.072
Social Obligation	0.799	0.799
Regional Tribalism	0.812	0.781
Psychological Commitment	1.175	0.237

This paper used SPSS to conduct a one-way ANOVA test for the effect of age on the other variables and from the table it can be seen that the significance level is greater than 0.05 and therefore there is no significant difference in the effect of age on these 8 variables.

5.3.3. Variance test for education on each variable

Table 5-16: Results of the variance test for the variables of Education

Variables	F	Sig.
Personal Identity	0.722	0.578
Affective Commitment	0.492	0.742
Resources Cost	0.828	0.509
Psychological Cost	1.071	0.372
Social Obligation	1.390	0.239
Regional Tribalism	2.833	0.026
Psychological Commitment	1.965	0.101

This paper uses SPSS to conduct a one-way ANOVA test for the effect of education on the other variables and it is clear from the table that the level of significance is greater than 0.05 for all the variables except Regional Tribalism, so that education has a significant effect on the variable of geography and no significant difference in the effect on the other six variables. It could be that many of the fans who choose to support Barça went to university or graduate school in the Barcelona area, which makes their connection with Barça stronger.

5.3.4. Variance test for income on each variable

Table 5-17: Results of the variance test for the variables of Income

Variables	F	Sig.
Personal Identity	12.178	<0.001
Affective Commitment	8.052	<0.001
Resources Cost	6.949	<0.001
Psychological Cost	6.627	<0.001
Social Obligation	1.562	0.186
Regional Tribalism	0.596	0.666
Psychological Commitment	10.041	<0.001

This paper uses SPSS to conduct a one-way ANOVA test for the effect of income on the other variables and it is clear from the table that the level of significance of income is less than 0.05 for all variables except Regional Tribalism, so there is a significant difference in the effect of income on several other variables. This could be that local people are more pro inclined to work in their home town and income is not the first factor they consider.

5.3.5. Variance test for Time to become a Barça fan on each variable

Table 5-18: Results of the variance test for the variables of Time to become a Barça fan

Variables	F	Sig.
Personal Identity	36.188	<0.001
Affective Commitment	33.673	<0.001
Resources Cost	31.993	<0.001
Psychological Cost	41.112	<0.001
Social Obligation	0.862	0.488
Regional Tribalism	1.797	0.131
Psychological Commitment	47.199	<0.001

This paper uses SPSS to conduct a one-way ANOVA test for the effect of Time to become a Barça fan on the other variables, and as can be seen from the table, the level of significance of time to become a Barça fan on all variables is less than 0.05, so there is a significant difference in the effect of income on these variables. Length of time as a Barca fan is a key factor influencing the psychological commitment of fans.

5.3.6. Own a season ticket Independent samples t-test for each variable

Table 5-19: Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
PC	Equal variances assumed	25.549	0.000	13.749	209	0.000	1.50339	0.10934	1.28783	1.71895
	Equal variances not assumed			15.363	198.803	0.000	1.50339	0.09786	1.31042	1.69636
PI	Equal variances assumed	15.539	0.000	9.818	209	0.000	0.97613	0.09942	0.78013	1.17213
	Equal variances not assumed			10.525	208.888	0.000	0.97613	0.09274	0.79329	1.15896
RT	Equal variances assumed	0.001	0.977	-0.214	209	0.831	-0.05969	0.27952	-0.61073	0.49134
	Equal variances not assumed			-0.214	180.381	0.831	-0.05969	0.27952	-0.61125	0.49186
AC	Equal variances assumed	6.410	0.012	10.675	209	0.000	0.92904	0.08703	0.75747	1.10061
	Equal variances not assumed			11.268	206.458	0.000	0.92904	0.08245	0.76649	1.09158
RC	Equal variances	2.868	0.092	6.363	209	0.000	0.81758	0.12850	0.56426	1.07089

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
	assumed									
	Equal variances not assumed			6.548	196.749	0.000	0.81758	0.12486	0.57135	1.06381
PCT	Equal variances assumed	18.878	0.000	6.448	209	0.000	0.71382	0.11071	0.49558	0.93206
	Equal variances not assumed			7.065	206.695	0.000	0.71382	0.10104	0.51462	0.91302
SO	Equal variances assumed	2.473	0.117	-2.180	209	0.030	-0.30866	0.14161	-0.58783	-0.02949
	Equal variances not assumed			-2.096	155.475	0.038	-0.30866	0.14724	-0.59952	-0.01781

(PC=Psychological Commitment,PI=Personal Identity,AC=Affective Commitment,RT=Regional Tribalism,PCT=Psychological Cost,SO=Social Obligation,RT=Regional Tribalism)

As shown in Table 5-14, the two-sided significance of having a season ticket is greater than 0.05 for Regional Tribalism and less than 0.05 for all other variables, so there is a significant difference in the effect of having a season ticket on all remaining variables except for Regional Tribalism.

5.3.7. Variance test for Playing experience on each variable

Table 5-20: Results of the variance test for the variables of Playing experience

Variables	F	Sig.
Personal Identity	11.733	<0.001
Affective Commitment	8.009	<0.001
Resources Cost	7.425	<0.001
Psychological Cost	10.359	<0.001
Social Obligation	2.140	0.096
Regional Tribalism	1.674	0.174

Psychological Commitment	11.801	<0.001

This paper uses SPSS to conduct a one-way ANOVA test for the effect of Playing experience on the other variables and it is clear from the table that the level of significance is greater than 0.05 for all the variables except Regional Tribalism, so that Playing experience has a significant effect on the variable of geography and no significant difference in the effect on the other six variables. This is probably because the way football is played has nothing to do with region, and the experience of playing football can be had anywhere.

5.4. REGRESSION ANALYSIS

Table 5-21: Personal Identity Regression Statistics Results

Variables	Value
Gender	0.663
Age	0.463
Education	0.383
Income	0.377
Time to become a Barça fan	<0.001
Own a season ticket	<0.001
Playing experience	0.110
Consistency	0.006
Belonging	0.200
R	0.858
R Square	0.736
R Square Change	0.736
F	62.128
F Change	62.128
Durbin-Watson	1.595

In the Model Summary table of the results output, the Durbin-Watson value is 1.595, close to 2, indicating that there is no significant correlation between the residuals, i.e. the residuals are independent.

The Model Summary table in the results output shows the fit of the model, where the complex correlation coefficient R is 0.858, indicating a close linear correlation. The coefficient of determination, R Square (R^2), is 0.736, which is close to 1, indicating a good fit of the model to the data.

The regression results show that the significance level for consistency is less than 0.01 and the standardised coefficient is positive, while the significance level for

attribution is greater than 0.05, therefore, consistency has a significant and positive effect on psychological commitment and attribution has no significant effect on psychological commitment. Hence, H1, H1a holds and H1b does not hold.

Table 5-22: Affective Commitment Regression Statistics Results

Variables	Value
Gender	0.754
Age	0.411
Education	0.269
Income	0.439
Time to become a Barça fan	<0.001
Own a season ticket	<0.001
Playing experience	0.174
Affective Commitment	<0.001
R	0.863
R Square	0.745
R Square Change	0.745
F	73.704
F Change	73.704
Durbin-Watson	1.614

In the Model Summary table of the results output, the Durbin-Watson value is 1.614, close to 2, indicating that there is no significant correlation between the residuals, i.e. the residuals are independent.

The Model Summary table in the results output shows the fit of the model, where the complex correlation coefficient R is 0.863, indicating a close linear correlation. The coefficient of determination, R Square (R2), is 0.745, which is close to 1, indicating a good fit of the model to the data.

The regression results show that the significance level of affective commitment is less than 0.01 and the standardised coefficient is positive, therefore, affective commitment has a significant and positive effect on psychological commitment. Hence, H2 holds.

Table 5-23 Resources Cost Regression Statistics Results

Variables	Value
Gender	0.814
Age	0.284
Education	0.237
Income	0.427
Time to become a Barça fan	<0.001
Own a season ticket	<0.001
Playing experience	0.101
Resources Cost	<0.001
R	0.853
R Square	0.727
R Square Change	0.727
F	67.198
F Change	67.198
Durbin-Watson	1.569

In the Model Summary table of the results output, the Durbin-Watson value is 1.569, close to 2, indicating that there is no significant correlation between the residuals, i.e. the residuals are independent.

The Model Summary table in the results output shows the fit of the model, where the complex correlation coefficient R is 0.853, indicating a close linear correlation. The coefficient of determination, R Square (R^2), is 0.727, which is close to 1, indicating a good fit of the model to the data.

The regression results show that the significance level of Resources Cost is less than 0.01 and the standardised coefficient is positive, therefore, affective commitment has a significant and positive effect on psychological commitment. Hence, H3 holds.

Table 5-24 Psychological Cost Regression Statistics Results

Variables	Value
Gender	0.669
Age	0.289
Education	0.219
Income	0.437
Time to become a Barça fan	<0.001
Own a season ticket	<0.001
Playing experience	0.091
Psychological Cost	<0.001
R	0.852
R Square	0.726
R Square Change	0.726
F	66.966
F Change	66.966
Durbin-Watson	1.573

In the Model Summary table of the results output, the Durbin-Watson value is 1.573, close to 2, indicating that there is no significant correlation between the residuals, i.e. the residuals are independent.

The Model Summary table in the results output shows the fit of the model, where the complex correlation coefficient R is 0.852, indicating a close linear correlation. The coefficient of determination, R Square (R2), is 0.726, which is close to 1, indicating a good fit of the model to the data.

The regression results show that the significance level of Psychological Cost is less than 0.01 and the standardised coefficient is positive, therefore, affective commitment has a significant and positive effect on psychological commitment. Hence, H4 holds.

Table 5-25 Social Obligation Regression Statistics Results

Variables	Value
Gender	0.648
Age	0.208

Education	0.428
Income	0.400
Time to become a Barça fan	<0.001
Own a season ticket	<0.001
Playing experience	0.123
Social Obligation	0.100
R	0.854
R Square	0.729
R Square Change	0.729
F	67.931
F Change	67.931
Durbin-Watson	1.634

In the Model Summary table of the results output, the Durbin-Watson value is 1.634, close to 2, indicating that there is no significant correlation between the residuals, i.e. the residuals are independent.

The Model Summary table in the results output shows the fit of the model, where the complex correlation coefficient R is 0.854, indicating a close linear correlation. The coefficient of determination, R Square (R^2), is 0.729, which is close to 1, indicating a good fit of the model to the data.

The regression results show that the significance level of Social Obligation is more than 0.05, therefore, Social Obligation has no significant effect on psychological commitment.Hence, H5 does not hold.

Table 5-26 Regional Tribalism Regression Statistics Results

Variables	Value
Gender	0.628
Age	0.488
Education	0.252
Income	0.302
Time to become a Barça fan	<0.001
Own a season ticket	<0.001
Playing experience	0.100

Regional Identity	<0.001
Regional Glory	<0.001
R	0.855
R Square	0.731
R Square Change	0.731
F	60.557
F Change	60.557
Durbin-Watson	1.597

In the Model Summary table of the results output, the Durbin-Watson value is 1.597, close to 2, indicating that there is no significant correlation between the residuals, i.e. the residuals are independent.

The Model Summary table in the results output shows the fit of the model, where the complex correlation coefficient R is 0.855, indicating a close linear correlation. The coefficient of determination, R Square (R^2), is 0.731, which is close to 1, indicating a good fit of the model to the data.

The regression results show that the significance level of Regional Tribalism is less than 0.01 and the standardised coefficient is positive, therefore, Regional Tribalism has a significant and positive effect on psychological commitment. Hence, H6,H6a,H6b holds.

5.5. EMPIRICAL RESULTS

Based on the empirical analysis in this chapter, this paper completes the investigation of the factors influencing the psychological commitment of Barcelona FC fans. The empirical analysis is divided into two main parts, firstly, t-tests and variance tests are conducted on the control variables, and the results show that the four variables of income, time as a fan, season ticket ownership and frequency of playing football have a significant effect on the other variables. The research hypothesis was then analysed by regression, with the effect of social obligation being insignificant and the other dimensions having a significant and positive effect on psychological commitment.

Table 5-27 Research Hypothesis Testing Results

Hypothesis	Content	Result
H1	**Personal Identity has a positive effect on fans' psychological commitment.**	**Yes**

H1a	Consistency has a positive effect on fans' psychological commitment.	Yes
H1b	Belonging has a positive effect on fans' psychological commitment.	No
H2	**Psychological Cost has a positive effect on fans' psychological commitment.**	**Yes**
H3	**Affective Commitment has a positive effect on fans' psychological commitment.**	**Yes**
H4	**Resource Costs have a positive impact on fans' psychological commitment.**	**Yes**
H5	**Social Obligation has a positive effect on the psychological commitment of fans.**	**No**
H6	**Regional Tribalism has a positive effect on the psychological commitment of fans.**	**Yes**
H6a	Regional Identity has a positive effect on fans' psychological commitment.	Yes
H6b	Regional Glory has a positive effect on fans' psychological commitment.	Yes

6. CONCLUSION AND OUTLOOK

6.1. RESEARCH FINDINGS

FC Barcelona has a strong fan base that has been a fan of the team for many years, and the vast majority of the fan base is made up of locals or people who studied in Barcelona. The majority of them say they will continue to support Barcelona, regardless of the team's level of performance and success. The affective commitment of FC Barcelona fans to the team is highest in six dimensions, followed by psychological cost, personal identity, resource cost and regional tribalism, and lowest by social obligation.

The personal identity of the fans has a positive impact on psychological commitment, especially in terms of consistency, as the fans gradually integrate themselves with the team, sharing both honor and disgrace, and feeling the same way whether the team is praised or criticized from outside. Carron, Bray & Eys (2002) indicated a strong relationship between cohesion and success in a sports team. Wann, Hackathorn & Sherman (2017) showed that belonging mediated the relationship between identification and meaning in life. In addition, belonging also mediated the relationship between fandom and meaning in life. In terms of belonging, however, there is no positive effect on psychological commitment, probably because most fans are still sensible enough to separate their lives from their football and do not cross the two to a high degree.

The affective commitment of fans has a strong positive impact on psychological commitment. The affective commitment represents the fans' love and affection for this team, and when the affection reaches a certain level, this affection for the team translates into love for the team, which is a difficult emotion to let go of. Evanschitzky, Iyer, Plassmann, Niessing & Meffert (2006) suggested that emotionally bonded with customers provides a more enduring source of loyalty as compared to economic incentives and switching costs. Therefore, fans who give a high affective commitment tend to have a strong psychological commitment to the team.

The resource cost of a fan has a positive effect on psychological commitment, and when more rational fans emerge, they will calculate whether they are getting out of the team what they put into it, in other words, whether the team is worth the money, time and emotion I put into it. Of course, some fanatics don't think about whether they are getting something in return for their investment, they just give everything to the team.

The psychological cost of being a fan also has a positive impact on psychological commitment, as fans consider the perceptions of those around them, the emotional cost of giving up their commitment and the fact that in this age of online information, people can express their support or love for their team through various social media, but equally, people are watched by others and the social pressure on fans to give up their status as a fan. Social pressure has to be taken into account if fans want to give up their fan status.

The social obligations of fans do not have a positive effect on psychological commitment, but in some ways, it does affect it. Fans are often reluctant to admit that they have been forced by others to be a part of a team, although this may be true, this creates a dilution of this aspect of social obligation on the part of the fans. They are less likely to want to feel that it is socially required of them and obligatory, preferring

to believe that they are independent individuals who have the right to make their own choices.

The regional tribalism of fans has a positive effect on psychological commitment. Meir (2009) suggested tribalism is an axiomatic characteristic of sport consumerism Generally speaking, the main fan composition of local teams is still local, as this is likely to be a tradition that has been carried on for generations, with fans being taken to games by their fathers at a very young age and, over time, becoming fans of the team themselves. The same argument can be made about the university, and it is not unusual for many fans from outside the area to fall in love with the team because they went to university in the area.Especially in a region as distinctive as Catalonia, FC Barcelona fans often have a special and irreplaceable attachment to Catalonia.

Finally, the reasons for the formation of fan psychological commitment are multiple and complex and this study shows that a combination of factors such as fans' personal identity, affective commitment, resource costs, and psychological costs come together to form it. These provide theoretical and empirical evidence to improve the quality of club service and fan loyalty levels.

6.2. INSIGHTS AND IMPLICATIONS

The success of a team is based on various factors, so it is not only the fans themselves that play an important role, but society and the region, as well as the people around them, are indispensable. Many clubs consider the performance of the team to be the most important goal, but according to the results of this study, fan identification and locality have a very high explanatory power and significance on the psychological commitment of the fans, which suggests that to be commercially successful, clubs should focus on creating the personality of the team to match the personality of the fans. In addition, clubs should focus on creating a local element to make the team a source of pride for their city or province.Rhoades, Eisenberger & Armeli (2001) indicated taht increasing affective commitment could decrease employee withdrawal behavior. Fan recognition is an important resource for the team. If the team is recognized by the fans, attendance at matches will increase, sales of related products will increase and, ultimately, the team's profits will increase. Strengthening a team's fan base is therefore one of the rules of survival. A natural human instinct is a local pride, and this is reflected in the relationship between fans and their team. People tend to feel an affinity with people who are from the same place as themselves, so fans tend to focus on their hometown team, or the place where they have studied or worked, which subsequently brings with it related purchases. It is an emotion and instinct that links geographical pride and interest, emphasizing and valuing its greater impact on the development of the team. Clubs should consider creating spaces for fan interaction outside the stadium, such as fan bars and fan restaurants, where fans can form some sort of branded community, which will strengthen their identity and loyalty. Teams should increase their interaction with local fans, for example by organizing youth football training sessions or amateur leagues, and placing large club advertisements in airports, train, and metro stations to increase the club's presence in the city.In terms of player changes, while we have to understand that clubs have to trade important players due to various issues such as

the salary cap, the forced trading of players who have been branded with the club or the team is likely to be accompanied by a massive loss of fans, unlike the players themselves who retire, where the fans become disgruntled with the club management and follow the star player to the next team he plays for.

Fan time has a profound effect on the psychological commitment of fans, with highly engaged fans spending more of their time following the team, attending games more frequently, and being willing to pay more for the team's products. This is a very important segment for team supporters who watch and participate in games. The more often they go to a game, the more fans will find it enjoyable to watch the game. Other fans see the activities surrounding the team as an important part of their lives and personality formation, and fan identity is an important label for them, if the team's particular label, personality, or characteristics shape or change their personality. Symbolic fans have a high level of fan identification. For this type of fan, the club should guide the design of a personality associated with the team's logo, while at the same time creating the personality and identity of the team, and linking the team's logo to the fan's symbol to promote the sale of the team's products.

In addition, the club should also focus on effective communication with the spectators at the venue, in particular by giving them an integrated role as spectators of the game in the stands and as a major force in shaping the atmosphere at home, which is an important part of the quality of the game. In terms of communication and advertising, the club can use outdoor advertising, home match goers guide advertising, and showcasing the team in sports games. The above measures can be used to increase exposure or stimulate attendance to drive fans through the club brand. To increase the stickiness of fans, clubs should increase their interaction with fans. Teams should also maintain and increase the level of involvement of their fan base through the Internet. A fan chat room should be set up on the team's official website or official forum, where players or coaches can interact with fans on a rotating basis, creating a branded community and allowing fans to meet members of the team. The club can also use Twitter and Instagram to regularly post and update topics, team stories, team news, and even internal news to increase the frequency of fans following the team and increase fan engagement through interaction.

Psychological commitment is often reflected in attitude. The importance of attitude reflects the importance and value fans place on the teams they follow. Cognitive structure is another key factor in a fan's attitude, whose level of knowledge and ability to perceive different aspects of the team determines whether or not they have a positive attitude towards the team. Thus, strengthening and stimulating the cognitive level of fans will help to increase their overall approval of the team. It also determines whether a fan is a true supporter and loyal to a team. Therefore, a deeper understanding and respect for fans' subjective beliefs will help to increase their acceptance of the team and achieve a positive attitude from the fans. Clubs should take better care of their fans, for example, by sending birthday wishes and offering discounts to last season ticket holders.6.3 Outlook and limitation

6.3. OUTLOOK AND LIMITATIONS

6.3.1. Outlook

In terms of modelling, the addition of behavioural and attitudinal loyalty variables can be considered as the next level of outcome variables. As psychological commitment and loyalty are inextricably linked as one element, psychological commitment affects loyalty to some extent, how exactly, and whether it is a positive or negative effect, is for future research to discover.

Furthermore, the study of fans' psychological commitment should be integrated with the local cultural context. The formation of culture is inseparable from regional identity, and the interweaving of fan culture with local traditional and regional culture makes fan culture have local regional characteristics and regional cultural elements, which are important in forming the cultural characteristics of each country and region. The Catalan football scene is one of the best in the world, so more detailed data and research is needed to study the culture thoroughly.

6.3.2. Limitations

The questionnaires were chosen to be distributed before fans entered the stadium due to the high cost of entering the stadium to watch the game. All questionnaires for this study were distributed at the Barca event and collected on-site. The questionnaires were generally distributed 2 hours before the start of the match, and most of the spectators started to enter the stadium about an hour before the start of the match, while some fans were still filling out the questionnaires, and some of them may have been in a hurry to fill out the questionnaires, resulting in a decrease in the authenticity of the questionnaires. In addition, during the questionnaire distribution process, I observed that generally speaking, students were more willing to fill in the questionnaire, while middle-aged fans were less enthusiastic to do so. This may also lead to uneven sample size and bias in the results.

All the scales in this study are based on previous studies, and the scientific accuracy of the design of the scales can be guaranteed, but they lack innovation in terms of the dimensions of the composition of fans' psychological commitment. There are some problems with the citation of the scales, the accuracy of the translation is still lacking in terms of the design of the scales, and some fans still encountered some statements that they did not understand when filling out the questionnaire. In addition, the theoretical view that the reasons for the formation of fan psychological commitment are complex and multiple, and existing studies have confirmed that the formation of fan psychological commitment is related to fan identity, geographical identity, affective commitment recognition, etc. However, it is impossible for the existing studies to completely include all the influencing factors, and similar to the existing studies, this study failed to completely include all the influencing factors of fan psychological commitment, and what other factors may influence psychological commitment is also a direction for future research.

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