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Master's Thesis of Sport Management

**Impact of the Use of Technology Based Referee System in Football:
A Case of Spanish La Liga Video Assistant Referee**

메가-스포츠 이벤트의 관중들이 자각하는 서비스 품질과 만족도:
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이 논문은 문화체육관광부와 국민체육진흥공단 지원을 받아 수행된 연구임

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Abstract

Impact of the Use of Technology Based Referee System in Football:

A Case of Spanish La Liga Video Assistant Referee

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This paper looks at the Video Assistant Referee (VAR) in the Spanish top flight. Video Assistant Referee technology was implemented in the Spanish top-flight during the 2018-2019 season. The technology was introduced to help referees reach more accurate decisions during a match in a bid to

reduce on the controversies during match day. This paper will examine whether the technology has managed to uphold what soccer or sport in general stands for – Respect, Fair Play and Transparency.

The study took a qualitative approach in which twelve participants participated in the interview session. These included three referees, journalists, coaches and players all who follow the Spanish Premier League every weekend that it is played. Data collected was transcribed and analyzed to find the meaning behind the respondents' answers.

Findings were able to show that Respect improved between players when VAR was introduced in Spain because of the cameras that were monitoring the actions of the players on the pitch. Respect here looks at actions such as players using their elbows on the pitch among other cases of violent conduct.

VAR technology failed to address the issue of Fair Play as players still dive (simulation) to get fouls from the referee.

A major talking point was one of Transparency because fans are not aware of what is being communicated between the referee and VAR, so VAR has so far failed to address the issue of Transparency in Spain.

According to my research findings mean that referees still need to be educated on how and when to use the technology to reach more accurate decisions.

Keywords: Video Assistance Referee, Spanish Premier League, Football, La Liga

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Chapter 1. Introduction

1.1 Background

The revolution of technology in football saw the introduction of the Goal Line Technology at the 2012 FIFA Club World Cup and since then a number of leagues across the world have used the system. The English Premier League was the first national league to vote in favor of Goal Line Technology after it was successfully used at the 2013 FIFA Confederations Cup (FIFA, 2013).

With the introduction of Goal Line Technology, the use of technology in soccer has grown from strength to strength. As a result, the International Football Association Board (IFAB) introduced the Video Assistant Referee (VAR) system as football's first use of video technology to reach more correct decisions. IFAB, the body that determines the Laws of the Game of association football unanimously approved the use of the VAR at the 132nd Annual General Meeting in Zurich on the 3rd March 2018. This was in a bid to increase fairness and integrity in the sport (IFAB, 2018).

The introduction of VAR in soccer is a step closer to perfection. Referees use it to change match-changing situations such as goals; close offside decisions are the most common reason for VAR being consulted after a goal has been scored, but shirt-pulling and other infringements can cause goals to be chalked off or whether there was an infringement in play before a goal is scored. Penalty decisions, a straight red card or in a case of mistaken identity. This helps to evaluate refereeing decisions that have not been seen in real time.

Australia's A League was the first to embrace the system in April 2017 although the system was not used when Melbourne City played Adelaide United. In Europe, VAR was first used in the German Bundesliga and Italian Serie A at the beginning of the 2017-18 season. The Spanish top-flight would embrace it the season and the English Premier League is going to use it in the 2019-2020 season.

The Union of European Football Associations (UEFA) decided to use the technology with effect from the knockout round of Europe's premier club competition with effect from February 2019. This came after training

of referees over a couple of months. UEFA has it in its plans to use VAR at the final tournament of UEFA Euro 2020 (UEFA, 2018).

Refereeing has undergone what some would call an evolution as the sport has also gone through the same both on and off the field. The Union of European Football Associations (UEFA) introduced the additional assistant referees (AAR), positioned alongside each goal to help the referee in the decision-making process particularly inside the penalty area where a decision can influence the result of a match (UEFA.com, 2017).

This solution did not prevent the occurrence of ‘ghost goals’ (legitimate goals that were denied) however. For instance, Ukraine was refused a legitimate goal in its game against England during the 2012 UEFA European Championship, despite the action happening right under the eyes of the ‘additional’ referee (Schang, 2015).

Referees became a permanent fixture soccer in 1891. They were a powerful as they are today with the powers to send off players as well as give penalties and free kicks without listening to appeals (FIFA.com, 2017).

Referees are such powerful figures in the game but are not immune to the criticism on match day. The calls they make are always put under the microscope and they could have a significant outcome of a match.

Soccer has become such a fast-moving sport due to the increased level of fitness among the players as well as the evolution of tactics in the recent past. This has only increased the demands on the referees to better their performances as their decisions are scrutinized since the sport gets more coverage all over the world.

The use of different types of technology has become important in recent years due to the fact that sports contain moments in which there are mistakes made by referees and officials. The introduction of technology regarding these sports in recent years has helped to bring down a number of these errors (Prayag Shah R. M., 2014).

A case of whether a ball crossing the line or not can be crucial in deciding whether a team gets maximum points in a match or earn a draw and in the long run the points dropped or earned can determine where a team finishes at the end of a season in a league.

Decisions in a game can have far reaching consequences and it is all in the hands of the referee who has full authority to enforce the laws of the game in connection with the match. Decisions will be made to the best of the referee's ability and these are based on the opinion of the referee who has the discretion to take appropriate action within the framework of laws of the game (FIFA, 2018).

A center referee covers approximately 11km during a match, with 900m of high-speed running and, consequently, the demands of match play represent a significant physical challenge to the individual officiating a game (Weston, 2012).

All signs have shown that video technology has been needed in football. The 1966 World Cup stands out as a game that decided an entire nations fate at the big stage - England won their only World Cup courtesy of a ball that never crossed the line against bitter rivals West Germany. Geoff Hurst won the World Cup on home soil in what would be the most controversial World Cup final to date. (FIFA.com, 2007).

Football or sport in general stands on three fundamental pillars – Fair Play, Respect and Transparency.

Fair Play has always been an applied concept. Many treatments of fair play were and still are, motivated more by the desire to use sport to teach some set of positive values, than by the goal of understanding the nature of the concept itself. It is generally agreed that sport teaches values, but the content of those values – indeed whether the values are good or ill – depends upon the way in which sport is played, taught and practiced. Fair play is often the phrase used to capture the view that sport should be used to teach positive social values, with the chosen values forming the content of the concept. On this view, fair play forms a subset of general moral or social values applied to, and taught through, sport and physical activity (Schneider, 1998).

Football is all about fair play and players need to show this on the pitch by winning fairly and avoiding acts such as simulation or diving to get the opponent sent off or to win free kicks and penalties from the referees.

1.2 Objectives

The purpose of this study is to assess whether VAR technology has upheld what soccer or sport in general stands for – Transparency, Fair Play and Respect.

1.3 Significance of the Study

Video aided refereeing has been introduced in soccer because teams sometimes had controversial calls go their way that would end up costing the opposition points. Sooner rather than later soccer was going to adopt video technology to “clean up” the sport and reduce on such human errors.

The Spanish League will be used as a point of reference because the technology has already been used for a season, 2018-2019 season.

VAR will also review controversial moments in a game that could have a significant outcome in a game such as marginal off sides and penalty calls.

1.4 Research Questions

This paper will examine the relevant literature to address the following three research questions:

- 1) What has been the contribution of VAR towards improving respect between players in Spain in terms of behavior among other aspects of the game?
- 2) What has been the contribution of VAR towards improving Fair Play between players in Spain in terms of players diving on the field among other aspects of the game?

- 3) What has been the contribution of VAR towards improving Transparency between in Spain. This as to how decisions are reviewed in the stadia.

Chapter 2. Literature Review

2.1 History of Technology in Sport

Throughout the past 200 years, technology and technological advancements in the sporting world has been prevalent. Within sports, technology has improved the accuracy, enjoyment and experience of both the athletes and spectators at sporting events across the United States and in the world. The key advancements in technology in the past, the present and the future have contributed to making the sport better for everyone. From the fans, to the coaches, to the referees, to the umpires to even the players, technology has evolved and so have our American pastimes and cultural beloved sports (Belly Up Sports, 2019).

2.1.2 Wireless Umpire Connections

Spectators often blame the umpire or referee when their team is losing a match, in cricket, and shortly after in several other sports, there has been an umpire structuring. Two of them are present on the field, actively following the game, each from their own unique viewpoint. When it comes to adjudicating a certain move, these two communicate with each other via a

wireless connection. A third, off-court umpire is also used for fuzzier verdicts. This umpire also uses a video replay system, which has gained usage in many other crucial sports moments. Since its invention, it has spread to soccer, basketball and many other sports (Sports Techie.net, 2017).

2.1.3 Sieko Electronic Automated Timing System (Photo Finish)

Looking at a brief history of technology in sports, we can see the technological implementations from early on in the late 1800's when photo finishing was implemented in horse racing. While this was a bit ahead of its time in the late 19th century, photo finishing really introduced the new wave of technology in sports and how technology could help the evolved sports.

In a whole sense of "Athletics" we can see technology was implemented in physical, individual athletics as early as 1920's but we really saw a grasp of cultural implementation start in the 1960's when automated timing systems with photo finish mechanisms were implemented into track and field. We then saw this evolve in the late 1980's as some companies were designing frequency chips to be implanted into different athletes to record times at different points along the race. Most recently, we have seen photo finish equipment capture at least 3,000 photos per second to

increase the accuracy of track winners at selected races (Belly Up Sports, 2019).

2.1.3 Off Field Umpire

The number of disputed decisions and the very obvious advantage of television replays has, however, brought about at least a partial change of attitude in some sports. Some have introduced television as an aid for match officials. This helps to justify the ontological authority of the umpire by restoring at least epistemological parity with TV viewers. Different sports have taken up this option to a greater or lesser extent and those that have taken it up use it for only some decisions (Collins, 2010). It took a while to be introduced in soccer but was regularly used for certain decisions in rugby and for a growing subset of decisions in cricket.

In these sports a newly created class of ‘off-field’ umpires and referees’ control and summarize the replay evidence. An example of the successful introduction of the off-field referee is rugby where it is used to

decide if a try-scoring move has been completed legally. In rugby the on-field referee makes the final decision based on the advice received from the off-field referee with viewers watching the replays while the decision is being made and TV commentators almost always anticipating the outcome correctly. This system works well—in that justice is widely seen to have been done—so long as the off-field referee’s judgments accord with the television viewers’ judgments—each viewer now being their own expert adjudicator (Collins, 2010).

2.1.4 Use of Technology in Sport

Technology affects sport in a number of ways. One of the main controversies surrounding sport is the incorrect decisions made by match officials. Introducing technology to officiate sporting matches could improve the accuracy of decision-making and can potentially reduce the number of controversial incidents (Fowler, 2013).

Soccer is a major sport and it quickly added technology in its world. Many players are commonly seen today wearing devices that allow the monitoring of the distances; they’ve traveled in a match (GPS) or their heartrate (heart-rate monitor). In 2015, the goal line system was

implemented, which signals if the ball completely goes beyond the goal line, and more recently, the video-referee has also been introduced to assist the referees in the most difficult decisions. It is worth mentioning that performance analysis software is being used by most technical teams in the present days, which allow the analysis and evaluation of both quantitative and qualitative data in all moments of the game (Video Observer Blog, 2013).

Table 1.

Technologies Used in Different Sports

Sport	Technology Used
Rugby Union	Microphone and earpieces Video referee
Rugby League	Microphone and earpieces Video referee
Soccer	Microchip ball and signal to referee

	Microphone and earpieces
	Electronic sensors in goal posts
	Video / Electronic linesman
	Tracking systems for offside play
	Video/3rd umpire
Cricket	Sound meter
	Hawkeye / Sky-scope tracking Systems
	Hawkeye
Tennis	Line calling system
	Trinity net fault system

2.2 Video Assistant Referee

A Video Assistant Referee is a highly trained match official who is watching the match concerned from the warmth of a room somewhere. They

do not have to be in, or even near, the stadium – all Bundesliga VARs, for instance, are based in one media center in Cologne. They do still have to be able to communicate directly with the referee through two-way radio-type things (Burnton, 2017).

Use of VARs during a match involves a number of practical arrangements. The VAR watches the match in the video operation room (VOR) assisted by an Assistant VAR (AVAR) and replay operator (RO) (IFAB, 2018).

Depending on the number of camera angles (and other considerations), there may be more than one AVAR or RO (IFAB, 2018). Only authorized persons are allowed to enter the VOR or communicate with the VAR / AVAR / RO during the match (IFAB, 2018). The VAR has independent access to, and replay control of, TV broadcast footage (IFAB, 2018).

The VAR is connected to the communication system being used by the match officials and can hear everything they say; the VAR can only speak to the referee by pushing a button (to avoid the referee being distracted by conversations in the VOR) (IFAB, 2018).

If the VAR is busy with a ‘check’ or a ‘review’, the AVAR may speak to the referee especially if the game needs to be stopped or to ensure play does not restart (IFAB, 2018).

If the referee decides to view the replay footage, the VAR will select the best angle / replay speed; the referee can request other / additional angles / speeds (IFAB, 2018).

VAR was for the first time used in the Spanish top-flight in the 2018-2019 season. It has had its own fair share of scrutiny just as the Goal Line Technology and other forms of innovations that have been introduced into soccer. Much of the attention in the VAR is put on the center referee but this is system that is comprised at least four officials with each having a distinctive role. VARs and other match officials are able to recommend reviews of play. The referee will however have the final say on whether the original decision is overturned. The VAR team will only intervene for serious missed incidents.

FIFA has gone out of its way to minimize as much error as there is when it comes to the system as a VAR team consists of the video assistant referee (VAR) and his three assistant video assistant referees (AVAR1,

AVAR2 and AVAR3). All video assistant referee team members are top FIFA match officials (FIFA, 2018).

The VAR is the leader of the team and communicates directly with the referee on the field of play (FIFA, 2018).

The Assistant Video Assistant Referee (AVAR1) concentrates on the main camera and sits next to the VAR whenever an incident is being checked or reviewed, he keeps the VAR in the know of what is happening (FIFA, 2018).

AVAR2 is tasked with looking out for potential off sides. He is an assistant referee. He is strategically placed to speed up the check and review process (FIFA, 2018).

The AVAR3 focusses on the TV live feed, assists the VAR in evaluating incidents and ensures good communication between the VAR and AVAR2 (FIFA, 2018).

Video operators are not part of the VAR team, but they are responsible for providing the best camera angles (FIFA, 2018).

All this takes place in the Video Operation Room. This is where all the assistant referees are stationed to assist the center referee. This is not only where the VAR team is seated but also where all the technology that runs the system is housed (FIFA, 2018).

There is a Referee Review Area (RRA), a designated area for the referee to review incidents. This is located at the pitch-side near the technical areas (FIFA, 2018).

2.2.1 Hand Signals

2.2.1.1 Hand to the Ear

The referee has the mandate to delay the start to the game at any given time to communicate with his assistants in the Video Operation Room. The referee will signal this by pointing to his ear for a break in play (FIFA, 2018).

2.2.1.2 Official Review Sign

The center referee gestures a television like signal with both his hands to signal that play has been halted so as he can review the pitch side monitor or change a decision, he might have missed based on the

information he receives from the VAR team. A review only happens if the referee makes the signal (FIFA, 2018).

It starts with the referee asking the VAR to review an incident. The VARs cannot just review whatever they want, though if they spot something, they think they ought to review they can ask the referee to ask them to review it. Once committed, the referee draws the outline of a TV screen in the air so everybody knows what's going on and then waits to be told what to do (or sometimes goes to review a decision themselves on an off-pitch monitor) (Burnton, 2017).

Decisions such as the position of an offence which may include an offside call, location of foul, point of contact for a foul, inside or outside the penalty area the VAR-only review is usually appropriate in such circumstances but an 'on-field review' (OFR) can be used for a factual decision, if it will help manage the players / match or come up with the decision. A crucial match-deciding decision late in the game is a good example (IFAB, 2018).

2.2.1.3 Final Decision

Depending in the situation, the referee will take the appropriate action and restart play in accordance with the Laws of the Game. The technical bench together with substitutes do not have the right to influence or interfere with the review process, including when the final decision. Failure to do so will result in the culprit being cautioned or sent off (IFAB, 2018).

The Virtual Offside Line

The virtual offside lines are computer generated lines projected onto the broadcast image of the pitch to help the VAR team determine if a player was in an offside decision or not. This can be helpful when it comes to tight calls that can be missed by the assistant referee on the line. (FIFA, 2018)

Virtual offside lines are superimposed on the broadcast image by computer software. Angle of view, lens distortion, field curvature and many other factors are considered when calculating the true position of the lines. The lines will be calibrated before each match to take into account the exact pitch dimensions and conditions on the day. (FIFA, 2018)

2.2.1.4 Goal Line Technology (GLT)

Soccer is a sport that is moving with the times but is not forgetting the fundamental value of the center referee being the ultimate decision maker in the game. The FIFA Club World Cup saw the introduction of the Goal Line Technology (GLT).

The goal line technology is a method used to determine when the ball has slightly crossed the goal line with the assistance of electronic devices and at the same time assisting the referee in awarding a goal or not. The aim of goal line technology is to assist the match officials in decision making rather than replacing them. Goal Line Technology must provide an evident indication that the ball has crossed the line so as to award or cancel the goal (Shah, 2014).

The ‘Wembley Goal’ in the World Cup final 1966 between England and Germany is probably the most famous goal in the history of football. The question whether it was a goal or not has been an open problem for decades. In 2012, after a long period of evaluation of different technologies, the International Football Association Board (IFAB) approved the use of Goal Line Technology (GLT) in official football matches. The objective of a GLT system is to provide a clear indication to the referee – typically on a

special watch - whether the ball has fully crossed the line (Rafael Psiuka, 2014).

There are several requirements a GLT system has to fulfill before it is allowed to be used in official matches. These are stated in the FIFA testing manual (FIFA, 2012) and they range from material tests in the lab to system tests under real game conditions and aim to guarantee a fully functional GLT system. There are three stages on the way to the pitch that have to be passed. First of all, in order to get licensed by FIFA, a system check guarantees the system to work even under adverse conditions. This has to be checked in a slightly modified manner for every stadium during the final installation test. This is usually done by an independent test institute and guarantees the installed system to work like the system tested during the system check. Finally, before kick-off the referee performs some short tests to ensure that the system is working properly (Rafael Psiuka, 2014).

2.2.1.5 Challenges for the Referee

One of the challenges for referees is that the human eye can handle only approximately 16 images per second, which means the ball needs to be

behind the line for at least 60 milliseconds. However, in some cases the ball is only behind the line for a few milliseconds before a player kicks it back or it rebounds back into the field of play, with the result that the human eye cannot see whether the ball has crossed the line (Prayag Shah R. M., A Review Paper on Goal-Line Technology, 2014).

Another challenge is the vantage point. When viewed from certain angles, it is easy to misjudge the ball's position. Cameras placed at different angles can mislead viewers when showing images "proving" whether or not the ball has crossed the line, which is why only technology dedicated to evaluating such incidents can support the referee in the decision-making process and contribute to a fair game (Prayag Shah R. M., A Review Paper on Goal-Line Technology, 2014).

With technology in the game, players are seen questioning less of the decisions the referee makes because the referee can have a second look at any incident that might be missed during play.

It remains uncertain to what extent the distance of the referee to the incident would affect the quality of the decision. It would be expected that being too close to the foul play would compromise the ability of the referee

to view and analyze the entire sequence. On the other hand, being far away could raise the risk of incurring errors as the play would not be seen with sufficient clarity (Mallo, 2012).

The present study showed that top-class international referees experienced a 14% error rate when judging foul play incidents whereas assistant referees presented a 13% error rate in offside decisions. Referees reduced the risk of making incorrect decisions when indicating incidents from a distance of 11 to 15 m. The error rate of assistant referees was not affected by their position in relation to the offside line. Angles of view of the assistant referees between 46 and 60 degrees favored correct decisions. Both referees and assistant referees increased the risk of making incorrect decisions towards the end of the matches.

A referee covers approximately 11km during a match, with ~900m of high-speed running and, consequently, the demands of match play represent a significant physical challenge. The analyses of within-match activity profiles have attempted to assess the possible occurrence of referee fatigue, with equivocal findings. However, researchers have demonstrated that referees' physical performances are interrelated with those of the

players during the same match. Therefore, the evaluation of referees' match activity profiles should be made in the context of the players' performances. High match-to match variability in key variables, namely, high-speed running and sprinting, along with age-related reductions in match running are other factors that require due consideration when interpreting physical performances (Weston, 2012).

Such demands on the referee leave so much room for error in matches of high intensity and pressure that could come from the fans watching in the stadium.

This could force the referee to make errors that could have been avoided such as awarding of a goal that should not have stood but because of pressure from the fans coupled with high intensity of the game that could lead to fatigue of the referee which might lead to the making of wrong decisions.

2.2.1.6 Hawk-Eye System

Hawk-Eye Technology is a computer framework utilized as a part of Cricket, Tennis, Hockey, Football and different games to outwardly track

the ball. The Hawk-Eye is an innovation which is meant to decide when the ball has crossed the goal line with the help of electronic gadgets and helping the official in making a decision on whether a goal is in or not. The system helps the match authorities in taking the right decision (Sujit Singh, 2016).

Hawk-Eye system was first invented by Dr. Paul Hawkins in 2001 in the UK. The cameras mounted around the stadium will track the ball from different angles. Second, the combination of the images and videos is used to create a 3-D display of the ball on television. With the precise location of the ball - on whether it has crossed the whole goal line or not, the correct outcome can be made. The decision will be sent to the referee's watch immediately via electronic waves, and the referee then is able to make the correct decision (Luan, 2014).

In order to catch every single moment in a gameplay, this technology requires seven high frame rate cameras installed in the stadium for each goal, which makes it 14 in each stadium. The most common location of the installation is on the roof of the stadium.

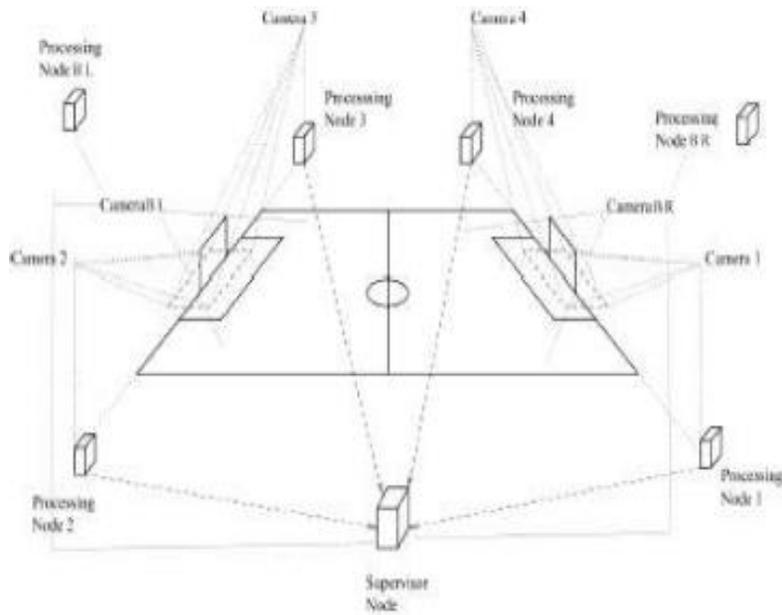


Figure 1 Camera installment Points for Football

The technology allows officials to make quick and accurate decisions to try and interrupt play as little as possible. While making the game fairer to players and officials as the decisions are more accurate. The major perk of this type of technology is that it gives the broadcasters the ability to enhance the viewing experience for fans at home (Harrod Sport, 2018).

2.3 La Liga

The Primera División de España was first held in 1928-29, when FC. Barcelona became the first team to be crowned Champion. Until then, Spanish football was organized around the Championship of Spain. The first seasons were played between the first champions and runners-up of the Championship of Spain. In the 1934-35 season the number of teams was increased to twelve (LaLiga, n.d.).

The men's top-flight professional division in Spain is known as the La Liga and is contested by twenty teams over a course of thirty-eight matches. The league has twenty teams and each team plays against each other twice in a round robin format. The bottom three teams in the season get relegated to the second division and are replaced by the top three in the second division.

The teams in the top-flight play one match at home and another away with the rest of the teams in the division, and their result is determined by the difference between the number of goals scored for and against, obtaining three points for a victory and one point for a draw. The points accumulated in a season determine their final ranking in the league standings (García, 2007).

Each football match is a sports confrontation between two teams of eleven regular first-team players and three substitutes, headed by a coach who is tasked with transforming the players' talent into the football club's victories. (García, 2007).

Of the eleven regular first-team players, there is a goalkeeper whose defensive role is to prevent the opposing team from scoring goals. The other ten players - defenders, midfielders and forwards - develop defensive and offensive strategies that define their own system of play which the club thrives on. (García, 2007).

The three substitutes can be used either to replace injured players or to modify the match strategy adopted and change the outcome of the game depending on the situation of the game.

The professional soccer teams that comprise the Spanish First Division are in their majority, the star product of the institutions of which they form a part. Many of these institutions also have soccer teams that play in lower leagues such as Barcelona B, as well as basketball teams and other professional team sports. Barcelona has a professional basketball team as

well as Valencia. The Barcelona basketball team is almost as dominant as the soccer side having won eighteen basketball league titles (Cebrian, 2004).

The team with the most points at the end of the season is the champion. Real Madrid are the record champions of Spain having lifted the championship thirty-three times while FC Barcelona come second with twenty-five league titles.

The Spanish league differs from some other leagues in a way that a head-to-head record is used to get the champion if teams are equal on points. Whichever team comes out top in the goal-scoring department in the two matches will be crowned champions. If head-to-head and goal difference tally, goal difference over the entire season is used, and then goals scored to get the eventual champion.

The Spanish First Division is characterized by the fact that many of the world's best players, in addition to the largest attendances on various match days, are concentrated in only two Spanish giants in Real Madrid and F.C. Barcelona, which regularly occupy the first two positions in the league table season in season out (Carlos Pestana Barros, 2008).

In the Spanish top-flight, the better the weather, the higher the likelihood of the match attendance being high. The second factor has to do with the game's being televised. Since in Spain football games are televised by both public and private channels, in the latter case only for subscribers to platforms such as beIN LaLiga, televising games will reduce attendance, especially, if the match is televised by a public channel. This is a cheaper alternative time saving alternative as opposed to travelling to the stadium (Rodríguez, 2002).

Economically, the annual budget for a football team in Spain must result in winning championships domestically and on the continent, as well as participation in international competitions like the FIFA Club World Cup - a tournament contested by winners from each confederation and the winners of the host nation's national champions. This provides greater prestige and higher profits for teams. Barcelona and Real Madrid have been beneficiaries from heavy investments in their teams hence dominating Spanish football and European football over recent year (Sánchez, 2007).

All these issues are based on the central economic concepts of operating efficiency and effectiveness of a football club. It is worth noting

that the economic importance of the football industry is contributed to by the emotional power of the fans, which is boosted by the level of success reached by a particular team. Barcelona and Real Madrid fans are able to buy season tickets and club merchandise due to the fact that their clubs are competing for top honors year in year out years.

Chapter 3. Method

3.1 Introduction

This chapter addresses the methodological procedures used in the research. The methodology used in this study will take a qualitative approach. Interviews will be conducted via phone interviews to allow an in-depth analysis of how video aided refereeing has had an impact in its first season in the Spanish Premier League.

A series of questions will be answered by a range of interviewees with expert knowledge on the subject matter.

3.2 Procedures

Qualitative researching is exciting and important. It is a highly rewarding activity because it engages us with things that matter, in ways that matter. Through qualitative research we can explore a wide array of dimensions of the social world including the texture and weave of everyday life, the understandings, experiences and imaginings of our research participants, the ways that social processes, institutions, discourses or relationships work, and the significance of the meanings that they generate.

We can do all of this qualitatively by using methodologies that celebrate richness, depth, nuance, context, multi-dimensionality and complexity rather than being embarrassed or inconvenienced by them. Instead of editing these elements out in search of the general picture or the average, qualitative research factors them directly into its analyses and explanations. This means that it has an unrivalled capacity to constitute compelling arguments about how things work in particular contexts (Mason, 2002).

A wide range of people ranging from referees to football experts such as journalists and coaches will be interviewed to pick their minds on the VAR technology in soccer in general but with an emphasis on the Spanish League and whether it has brought about Fair play, Transparency and Respect on the pitch.

The terminology used by different authors can be very confusing and the use of the term phenomenology is one example. However, it is also used to describe a particular type of qualitative research. Literally we know that phenomenology means the study of phenomena. Phenomena may be events, situations, experiences or concepts. Phenomenology is a way of describing something that exists as an integral part of the world in which we are living.

We are surrounded by many phenomena. Certainly, we are something aware of it but not fully understand. Sometimes it happens that our lack of understanding in respect to these phenomena may exist because the phenomenon has not been overtly described and explained or our understanding of the impact it makes may be unclear (Astalin, 2013).

VAR is one such example that has not yet fully understood by the football enthusiasts as it has brought about a lot of debate whenever it has been used to make certain decisions during the football matches.

Some football enthusiasts argue that it has not dealt with the issues it was introduced for such as Transparency and Fair play. Experts that follow the game week in week out will be able to analyze where the VAR technology has addressed the issues.

The first time the VAR technology was used in the Spanish League was in a match between Espanyol and Valencia. A free kick by Granero hit the woodwork and then bounced over the line as was confirmed by Del Cerro Grande after using the new technology. It is as a result the first goal in the history of the league that was confirmed using VAR and it is necessary

to refer to it as the 'Hawk Eye' goal line technology isn't used in Spain (Marca, 2018).

3.3 Qualitative, Semi-structured and In-depth Interviews

(Stuckey, 2013) says that there are three types of interviews used in social health research structured, semi-structured and narrative interview, each with varied levels of openness in format. Structured interviews have sequential and defined order in the questioning, where semi-structured interviews have a focus, but are flexible in order based upon the direction of the participant's responses. Narrative interviews are unstructured and typically begin with a wide open-ended question about a participant experience, where the participant is rarely interrupted in the telling of their story.

3.4 Focus Group Interviews

The focus group research method has been used in a variety of settings over the years. The method of using group interviews was described as long ago as 1926. Focus groups have been used by large corporations to gather the public's opinions regarding their products. In the past 20 years the focus group method has been increasingly used in health care research in a

variety of settings. Researchers use the focus group method in order to obtain in-depth knowledge concerning attitudes, perceptions, beliefs and opinions of individuals regarding a specific health issue (Karen L Then, 2014).

Focus groups are more than collection of individual interviews. The element of synergy and interaction between the group members play significant role in generating the data. Despite their few limitations, focus group interviews are valuable tools for collecting the qualitative data. They are much useful for the researches relating to planning, improvement and evaluation of certain programs (Latif, 2013).

3.5 Sampling

In order to answer the research questions, it is doubtful that researcher should be able to collect data from all cases. Thus, there is a need to select a sample. The entire set of cases from which researcher sample is drawn in called the population. Since, researchers neither have time nor the resources to analysis the entire population so they apply sampling technique to reduce the number of cases (Taherdoost, 2016).

Convenience Sampling

Convenience sampling involves drawing samples that are both easily accessible and willing to participate in a study (Yu, 2007).

3.6 Data Collection

In this research, the primary data was collected from interviews – of the focus group. The interview questions were divided into three categories:

- The first category probed respondents' opinion on whether VAR has improved the respect between players in Spain in terms of behavior among other aspects of the game
- The second category sought the opinion of respondents' on whether VAR has brought about Fair Play in Spain in terms of players diving on the field among other aspects of the game
- The third category of questions sought to examine whether the introduction of VAR has been transparent enough in its first season in Spain.

3.7 Focus Group Interviews

Four focus group interviews were held with three referees, journalists, players and coaches all asked the same questions. The questions included:

- In your opinion has respect improved between players with the introduction of VAR meaning that do we still see players diving and shirt pulling going on during matches? Please state why?
- In your opinion have off the ball incidents reduced with the introduction of VAR meaning that do we still see players using their elbows and pushing each other during matches? Please state reasons why?
- How often do we see players question the referee decisions now that there is VAR this as when players do not agree with decisions that referees make during matches?
- Do you think VAR has brought about Fair play in La Liga, do we see players committing less fouls during matches?
- In your opinion what are some of the issues concerning Fair Play that VAR has dealt with (diving in particular)?

- In your opinion has the players discipline improved now on the field now that there is VAR, has the level of fouling or off the ball incidents reduced? Please indicate why?
- What is your opinion on the way decisions are reviewed during matches, is it satisfactory for the spectators, are they involved when decisions are being made?
- What can be done to ensure that the review system is improved during matches meaning that the spectators are kept in the know of what is happening?
- What do you think is the spectators view on how decisions are reached using VAR, do they think that they are involved in the decision making process during matches?
- How often do we see the referee reverse his decision after consulting with VAR technology?

The respondents that participated in the interview were selected on basis that they have vast knowledge on football and the laws of the game.

Chapter 4. Analysis

4.1 Introduction

To complete this study properly, it is necessary to analyze the data collected in order to answer the research questions. As already indicated in chapter 3, data is interpreted in a descriptive form.

This chapter comprises the analysis, presentation and interpretation of the findings resulting from this study. The interviews from focus group discussions will require a qualitative interpretation.

4.2 Qualitative Research

Qualitative analysis gives more substance and to a study and the researcher gets detailed information. Qualitative research is concerned with trying to unpack a clear understanding of the problem under review in a more complex way than in the generalized way that is the outcome of questionnaires. This methodology is used to get information about how people think, feel and act and what they know. This section of the research was conducted in two ways, through individual interviews and focus group discussions consisting of 12 people.

Table 2

Category of Informants

Informants	Numbers
Referees	3
Journalists	3
Players	3
Coaches	3

The table shows data on categories of the informants interviewed in relation to their expertise on the Spanish Premier League. I discovered that with 12 respondents, the data gathered is similar. There is a similarity in the responses of the interviewees about what they think of the VAR technology in Spain.

4.3 Research Findings

The data represented below represents the findings and analysis of the data obtained from the individual interviewees on the impact of the Use of Technology Based Referee System in Football: A Case of Spanish La Liga Video Assistant Referee. The data was extracted and analyzed according to the objective of the study.

Respect

Table 3

	Question 1: In your opinion has respect improved between players with the introduction of VAR for instance do we still see players diving and pulling the shirt of the opponent during matches? Please state why?
Referee 1	I do believe that we are still in the infancy with regard to the use of VAR. Improved accuracy of decision making with the aid of technology will be one of the drivers to reduce dissent and improve the interaction between match officials.
Referee 2	It has improved as there are fewer occasions now when players feel that they have been cheated by the opponents – wrong decisions are overturned and when there is, for example,

an allegation of simulation to gain a penalty kick but the VAR confirms the correctness of the penalty kick then the sense of injustice and ‘robbery’ disappears. Equally, players treat each other with more respect physically as they know that violent conduct and serious foul play will be punished, even if it is initially undetected by the referee. There is thus a decline in these offences.

Referee 3 Yes, simply because the cameras would spot any unsporting or unruly behaviors at any time so there is no taking chances when it comes to this.

Player 1 To a small extent it has. Players are cautious while playing against each other because they now have it in mind that VAR can see every small detail on the pitch throughout the 90 minutes

Player 2 To a certain extent it has. Because players now know that any silly decisions made, or actions taken towards an opponent can easily be reviewed which could have a negative

effect on their respective teams. This has led to a more cautious approach from players which in turn breed respect of some sort.

Player 3 I do not think so, because we see players still launching out high flying tackles, which they would get away with before, but with them knowing they can be reviewed again, they still go on, with dangerous tackles that lead to red cards.

Coach 1 I don't think respect has improved between players but rather just that it adds another layer. Because it still doesn't definitively convey football actions as black and white and there will always be some degree of interpretation, the disagreements are still there. Rather than showing more respect due to the possibility of VAR, there is more questioning and insisting that something was done with VAR in mind. It becomes part of the deception rather than a cure for it.

Coach 2 Yes, it has. Confrontations between players/teams due to match officiating have reduced. This is because of the

perception that the decisions being made are more accurate with the reviews being done. Players therefore get on with the game more than they did in the past. VAR has therefore helped improve respect between players.

Coach 3 I'm not sure if respect has improved or not but at least some decisions can be taken in a fairer way.

Journalist 1 I'm not sure respect between players has improved to be honest. That's either there or it isn't. The introduction of VAR will certainly shine a light on certain behaviors and allow for more incidents to be reviewed, but the pure fact that the technology is now available won't temper a player's competitive edge in my opinion

Journalist 2 It's difficult to say without the statistics at hand, but I would not say massively. There are still regularly cases where players are in the officials' faces, shouting at referees etc. For example, Ousmane Dembele was sent off last month for comments made to a referee. I think there is probable less

diving, but I haven't seen a massive difference in terms of respect between players and officials. I don't think that's something which VAR can intervene on.

I think it has marginally improved. It hasn't scaled the levels of rugby with TMO and cricket with DRS because the review system is more open in those two. Players are privy to discussions between on field and video referees.

Table 4

Question 2: In your opinion have off the ball incidents reduced with the introduction of VAR meaning that do we still see players using their elbows and pushing the opponent during matches? Please state reasons why?

No- I think that we have seen very little use of VAR technology helping to reduce off the ball incidents. We have to secure more data to measure results over a period of 2/3

seasons.

Referee 2 Yes, as I just said, players treat each other with more respect physically as they know that violent conduct and serious foul play will be punished, even if it is initially undetected by the referee. There is thus a decline in these offences.

Referee 3 Yes, because the cameras would record the incidents out immediately. The players would respect one another and players follow the rules and competition.

Player 1 Yes, they have reduced. I think so because I am sure players are briefed by their coaches to be precautionary in whatever they do with or without the ball because every action and movement is being watched.

Player 2 Certainly, I believe they have as I said before, players now know that any silly decisions made, or actions taken towards an opponent can easily be reviewed which could have a negative effect on their respective teams.

Player 3 The off the ball incidents in my case have reduced due to players knowing they shall be penalized even if the referee doesn't see, due to the introduction of VAR, such as tackling of players that do not have the ball but are in perfect positions to receive the ball such as counter attacks

Coach 1 The most controversial have been on the ball incidents, especially fouls with the heel from the back. Off-ball incidents have reduced because of the possibility of retribution. However, with the consequences already so big and scrutiny already there with so many cameras, I don't think it is that significant compared to say five years ago, and we haven't seen any major cases of disciplinary measures do to off-ball incidents or changes in behavior.

Coach 2 Off the ball incidents have gradually reduced, and I believe that they will continue to reduce over time because of the introduction of VAR. Players know that they will be punished for fouls that were previously not easy for the referees to notice in real time. Red cards and even penalties can

ultimately influence results in a negative way so players know that with VAR they cannot get away with some of the off the ball incidents that they did before.

Coach 3 I think off the ball incidents are still there but players are more aware of the consequences that they can lead to. There are more chances now to get caught than before but there's are still chances of succession in hiding them.

Journalist 1 Without drilling down into the detail specifically, it would appear that off the ball incidents have reduced. I'm finding it difficult to think of any that I recall so far this season, and that's a good indicator I think.

Journalist 2 I guess so, but again without the statistics for red cards it is hard to give a definitive response. I think players are obviously aware that their actions, even if unseen, can now be picked up by VAR and lead to dismissals. But, at the end of the day, a lot of these moments in the past have been instinctive, in the moment actions, and maybe VAR is not always in your

head in that case.

Yes, they have. It is actually the reason why most
Journalist teams are going for zonal marking at set pieces and not the
3 good old fashioned man marking. They are aware that VAR
will flag them down for any off the ball contact.

Table 5

3: How often do we see players question the referee decisions now that there is VAR this as when players do not agree with the decisions that referees make during matches?

Referee 1 Dissent is still prevalent in the game and I am beginning to see players signal the rectangle requesting the referee to look at the pitch side monitor.

Referee 2 There are still initial protests but then the players seem content to wait for the outcome of the VAR review including the referee going to do an on-field review. Of course not everyone agrees with the final post-review decision but the acceptance levels are much higher than before VARs were introduced

Referee 3 Very often we see this happen because certain incidents are happening and players would want the center referee to verify the incidents via the pitch side monitor.

Player 1 Very often. I think it's a natural reaction for a player to complain. But with time they will get used to VAR and the referee decisions will be accepted by the players. Also there are still many incidents that happen where eyebrows are raised and

maybe the referee makes a questionable decision.

Player 2 It has increased tremendously to a point that Rugby Union rules might have to be adopted which allow only the team captain to seek audience with the match referee not all players on the pitch.

Player 3 This has reduced, since the referee has the help of VAR, and we now see the referees, rarely ignoring VAR even if they are sure of some cases whether it is a penalty or not, in order to be sure that the VAR agrees, although the VAR also gets some decisions at times wrong, such as the penalty that was awarded to Brighton against Everton over the weekend.

Coach 1 Players did so a lot before and now it is even more common and frustrating because the upside of doing it is so large whereas there is potentially no downside for questioning the referee or asking him to check with VAR on multiple occasions.

Coach 2 Players will always question refereeing decisions, especially because most decisions are subjective. However, with VAR, players do not question the decisions as much as they did in the past. Definite decisions like whether a player was offside or not cannot be questioned anymore.

Coach 3 There are still a lot of incidents with this referees' decisions coming under scrutiny from both teams as I mentioned before. It is only natural I mean.

Journalist 1 You've still got the issue of players surrounding the referee, which has got to stop, however, he now has the authority to be able to say 'hold on, this is being reviewed,' and there's little that the players on the field can do about it. I think the intimidation factor has been taken away which is a good thing, and we've seen that even if players and coaches still don't agree with the VAR, they've got no choice but to accept it. That's resulted in a lot less problems, albeit VAR still does need streamlining and it will evolve over time.

What we see now is players asking for the referee to go to VAR if they think they should be awarded a penalty or if they think there should be a red card. So we still see players questioning referees, although I don't recall seeing many occasions where players have continued to question decisions once VAR has had its say.

Journalist

3 I think they still do. It is instinctive.

Fair Play

Table 6

Question 1: Do you think VAR has brought about Fair play in La Liga, do we see players committing less fouls during matches?

Referee 1 Any piece of technology that improves decision making will bring about Fair Play. However, you appear to think that integrity of officials is in doubt. I frankly do not believe that they are human and will make errors.

Referee 2 What I have said before would suggest that it has, there is still initial protests but then the players seem content to wait for the outcome of the VAR review including the referee going to do an on-field review.

Referee 3 Yes. A player will not throw about an elbow or pull the shirt of the opponent in the penalty box at a set piece because each of their moves is being monitored and will be punished.

Player 1 To a greater extent, it has brought fair play in La Liga.

Player 2 To say that it has brought implies that wasn't any Fair
Play in the first place. What I would say is that it has
improved.

Player 3 Yes, I do think so.

Coach 1 No, VAR brings up different sets of issues but doesn't
go about promoting Fair Play since the game is still subjective
in nature.

Coach 2 VAR has reduced incidents where players try to take
advantage of match officials in order to gain an edge for their
teams. This leaves players and teams to concentrate on the
game and less on gamesmanship.

Coach 3 I'm not sure. What I think VAR has brought is more
fairness to some decisions that before were discussed.

Journalist
1 I think one has to define Fair Play. If by that do you
mean has it cut down arguments over decisions, then yes

absolutely. Has it cut down on certain fouls? No. It's just given the officials the ability to get a higher level of decisions correct.

I think it's been quite good in La Liga, much better than in the Premier League, for example, withstanding the odd controversial decision. I remember seeing several VAR decisions go against Real Madrid and Barcelona and thinking: 'There's no way those decisions go against the big clubs pre-VAR.' So, in that sense, I think we are seeing a fairer Liga, although some of the smaller clubs may still not believe they get enough decisions their way.

Journalist Not really. Play acting is still commonplace in my
3 book.

Table 7

Question 2: In your opinion what are some of the issues concerning Fair Play that VAR has dealt with making reference to dissent and simulation among others?

Referee 1	VAR has improved the levels of accuracy around Penalty kicks
Referee 2	I do believe that there has been a general reduction in protests and dissent from the players. They get on with the game.
Referee 3	Off sides, penalties and handballs. Every goal is reviewed so no goal from an off side position will be rewarded let alone those that might hit the hand of a player before a goal

is scored.

Player 1 VAR to a greater extent helps to fully enforce the two core aims of Fair Play which are respect for all the rules as well as equal treatment for all the players.

Player 2 I do think the rate at which players dive has tremendously reduced now that there is technology in the game. It has been a vice that has been dealt with.

Player 3 Cases such as awarding false penalties, as well as giving the right red cards in case of dangerous tackles.

Coach 1 As mentioned, the on-ball tackles on the Achilles heel were major talking points. Some felt the red cards given were too harsh as there wasn't intent, although according to the laws of the game, after Video Review, a red was the only possible response.

Coach 2 Players no longer try to gain unfair advantages as much as they used to because of VAR. These include incidents such as: handballs, shirt pulling, elbows.

Coach 3 Unfair decisions that can lead to win or lose games.

Maybe a player diving in the penalty area to win a penalty or a handball that might play in his team's favor.

Journalist 1 It's cut down the influence that players and managers may think they have over the officials if they surround them in an aggressive manner. Though they would never admit it, it's been blindingly obvious in the past that officials have waved a card or two at the behest of certain players. Off sides have also been called 100 percent correctly since VAR's inception, which has to be a good thing.

Journalist 2 As mentioned above, it's helped give decisions against the big clubs which maybe wouldn't have happened before: marginal off sides, penalties etc. I can understand why as an official, especially at the Bernabeu or Camp Nou, it can be hard to give marginal calls against Madrid and Barcelona.

Journalist 3 Simulation, handball/ball to hand and borderline calls on offside.

Table 8

Question 3: In your opinion has the players discipline improved now on the field now that there is VAR? has the level of fouls reduced or off the ball incidents. Please indicate why?

Referee 1 No - sadly one area that VAR is not covering is the ever increasing problem of acts of simulation.

Referee 2 Now players know that they cannot escape because of the VAR, they take fewer risks with misconduct such as

simulation and shirt pulling.

Referee 3 Very much so, as earlier stated, the cameras are monitoring everything that happens on the pitch so players are not going to do anything out of the laws of the game that might cost their team.

Player 1 Player discipline has definitely improved. For example, during corners, players are now cautious when it comes to jersey tagging and small infringements because they know that play can be stopped and VAR applied. Players also can't afford to get themselves involved in scuffles because VAR can be used to view everything that transpired during a scuffle.

Player 2 Of course, it has improved on face value, but statistics might show something different because one must ascertain whether the number of red card offences has shot up or even the penalty incidents. Scrutiny therefore must be given to this question because statistics aren't readily available to the layman.

Player 3 I do not think it has improved since we are seeing more players being sent off, as well as off the ball incidents where

players start pushing each other, when they have lost their tempers.

Coach 1 Perhaps in terms of accountability, but I don't see any notable differences in player discipline in terms of fouls or style of play.

Coach 2 Yes, I think that discipline of players has improved on the field. Players know that they cannot get away with some of the things that they could do in the past. Players also know that the decisions are going to be reviewed and they therefore tend to respect the decisions that are being made.

Coach 3 I don't think it has improved. Although the players know about VAR they are sometimes, still complaining to the referees or automatically asking them to check on the screen.

Journalist 1 Again, I don't know that it has per se. Certain elements of player behavior has improved, but VAR will never, for instance, come into a defenders thinking if he's last man and an attacker is running in on goal. He'll be brought down and the defender will 'take one for the team' whether VAR exists

or not. The surrounding of the official on the pitch needs to be eradicated completely. At present, at least we have a scenario where perhaps players are not as aggressive around a referee as they once were, with all waiting to hear the decision ‘from upstairs.’ VAR has therefore taken some of the heat out of certain situations.

I don’t think it’s had a major affect. Football is played on instincts and the likes of Luis Suarez, Sergio Ramos. Only Journalist know one way to play and will continue to play the way they 2 have always done: it’s what has made them the best. I think it’s reduced diving, but there haven’t been any other major changes because of VAR in my opinion.

Hard to quantify this as I believe it is within certain Journalist players to do anything to get decisions go their way even 3 knowing that VAR is present. You will still see a player dive to win a penalty or free kick in a dangerous position.

Transparency

Table 9

Question 1: What is your opinion on the way decisions are reviewed during matches, is it satisfactory for the spectators, are they involved when decisions are being made?

Referee 1 In the England Premier League there appears to be a lack of the use of the pitch side monitor. I believe that if the IFAB criteria on the use of monitors is not applied then the decision is taken away from the referee. Law 5 is clear that the sole decision maker is the referee.

Referee 2 I think that better communication within the stadium is needed but this depends very much on the culture of football in each country – showing replays of incidents that have been reviewed can work well in some countries but in others it would lead to massive spectator problems.

Referee 3 I believe it delays the game and is time consuming as the center referee from time to time might have to run to the pitch side monitor to review particular incidents that have happened on the pitch.

Player 1 I would prefer a small screen being set up for the referee so that he can make the decision himself like in the UCL than having another official make a decision for him. This applies especially when it comes to penalty decisions.

Player 2 It could be improved to have more transparency in the game.

Player 3 I think it has limited the free flow of the game, as most incidents are checked, and at times take long, which makes some teams lose their flair and allow teams to rebuild. Some VAR decisions are also not accurate which questions the use of VAR.

Coach 1 With VAR, which decisions are reviewed and which are not still leaves a lot to be desired.

Coach 2 The process of reviewing decisions is still not as quick or smooth as it should be. The stoppages are longer than they should be at times. Also, there is still an element of confusion amongst the fans during some of the reviews. There is also a lack of consistency in some of the decisions that are being made across the different matches or competitions. All this however, is getting a bit better over time as both the officials as well as the fans are adapting to it.

Coach 3 I think that helped the game to be fair although at
sometimes decisions can still be wrong.

Journalist 1 On a personal level, I would prefer that either each
contentious decision is reviewed via the screen at the side of
the pitch, or the work that the VAR is doing is seen on the big
screen rather than just a 'Goal' or 'No Goal' decision. I think
supporters are confused as to why some decisions are made
and haven't understood the process of how the officials have
come to their decision.

Journalist 2 I think it's fine but improvement could be made.
Rugby's TMO system seems good.

Journalist 3 You can still relate this to what I said about the
technology used in rugby and cricket it hasn't scaled the levels
of rugby's TMO and cricket's DRS because the review system
is more open in those two sports. It is not transparent.

Table 10

Question 2: What can be done to ensure that the review system is improved during matches? How can spectators be kept in the know of what is happening?

I believe that to improve the system the use of big screens and the ability for the spectators to witness the Referee 1 interrogation of the decision making process will improve its use. The referees' conversation with the VAR should be transmitted inside the stadium just like rugby union.

There is very good on-going education of referees, Referee 2 VARs and technicians to improve their skills and the speed and accuracy at which they operate

Communication between the referee and the VAR Referee 3 should be shared to all in the stadium. There needs to be a mechanism that involves the fans on what is being said between the key decision makers

Player 1 I would prefer a small screen being set up for the referee so that he can make the decision himself like in the UCL than

having another official make a decision for him. This applies especially when it comes to penalty decisions

Player 2 Replays while decisions are being reviewed should be shown in the stadia because the people watching at home have the luxury to do so while the fans that have paid money for the live experience don't get the opportunity to see what the officials in the VAR studio are reviewing and why certain decisions have been taken.

Player 3 The referees should not always rely on VAR, they would consult with the lines men first in some decisions that are clearly in order to avoid time wastage

Coach 1 The biggest improvement that must be made is the amount of time it takes to reach a decision. Coaches enjoy it because it finally gives them a "time out" like in other sports, players can readjust and get hydrated, but the ones who lose out the most are the fans. This is surely the biggest improvement that must be made, with perhaps also a clearer communication

with what is and isn't reviewable by VAR.

Coach 2 Better communication between pitch officials and video officials must be ensured, any 50/50 decisions or non-conclusive decisions should be ignored, decisions that need to be reviewed by the center referee should be reviewed on the pitch side screen as quickly as possible. There should be no guarantee that the decisions reviewed pitch sidearm overturned, there should be a standard procedure for decision review across all competitions.

Coach 3 Maybe by showing what the referees are seeing on the stadium screen to provide more information to everyone attending to the game.

Journalist 1 To improve it for the officials themselves, as well as players/managers, it has to be sped up. To have to wait 2-3 minutes for a decision isn't helping anyone. To improve it for supporters, maybe take their cue for rugby. Supporters of that

sport often have an earpiece or small radio which automatically picks up the referee's frequency. They can hear the officials explain their decisions. Maybe that could be an alternative in football.

Journalist 2 I don't know. If I had the answer, I'd be working for the FIFA team developing VAR! The clear and obvious error line is a good one in theory but it leaves room for debate. We need to ensure that VAR is much more consistent and that the decisions are taken quicker. How do they do that? I'm not sure!

Journalist 3 Make it more transparent by involving the spectators in the stadia.

Table 11

Question 3: What do you think is the spectators view on how decisions are reached using VAR, do you think they could be involved in the decision making process during matches?

Referee 1 They should be involved more in the process through the use of the big screens

Referee 2 Spectators are often blinkered so they do not always believe what is in front of their eyes. As mentioned before, better communication with spectators in the stadium is generally needed

Referee 3 I believe they think it is time consuming and has let the game lose its natural flow because of the amount of stoppages.

Player 1

A small screen should be set up on the pitch side for the referee to review incidents by himself and make the decisions.

Player 2

Spectators in the stadium do not get the chance to review the decision unlike those watching at home, so as earlier mentioned replays should be shown in the stadia via the giant screens.

Player 3

I think their view is based on how the VAR affects them whether it us against or for them, most who get on the wrong side would say, technology has killed the vibe of the beautiful game, while others would say it's fair and square which I would agree considering VAR gets the decisions 100 percent correct.

Coach 1

The spectators, as can be expected, celebrate VAR when it benefits their team and question the process when it doesn't. As with much else in football, the debate lines are pretty set and few will budge or change their opinions on the matter, regardless of future developments. Rather they'll look to fortify their current position on it.

Coach 2

I think they have to get used to waiting for a short or long period of time to make sure that a fair decision is taken.

Coach 3

I think they have to get used to waiting for a short or long period of time to make sure that a fair decision is taken.

Journalist

1

As I've stated before, it's a lack of awareness of the process that the officials have used to come to their decision that is causing problems with supporters. Even if there are only centimeters in an offside decision, VAR will invariably get that call correct, but those in the ground don't get to see the graphic to understand that.

Journalist

2

Most match-going fans I speak to don't like it. They feel in the dark as they don't know what's going on when a decision goes to VAR. They also feel it kills the buzz of a goal: you never know if it's going to stand or be ruled out. I know people that go to fewer games now because of VAR.

Journalist

The spectators are kept in the dark. VAR should borrow from the openness of TMO in Rugby and DRS in Cricket where

3	the fans are kept in the loop as to what is informing the video referee's decision
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Table 12

Question 4: How often do we see the referee reverse his decision after consulting with VAR technology?

Referee 1	Not enough
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Referee 2	This varies but as a referee only goes for an on-field review when the VAR believes there has been a 'clear and obvious error' then in these cases the original decision is reversed on probably 75-80% of occasions
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Referee 3 Quite often. This after the referee has had a second look at the incident will always have the opportunity to overturn the initial decision where necessary.

Player 1 Very often especially when it comes to offside calls.

Player 2 Again, the statistics are not readily available so I cannot declare my position on this front.

Player 3 This has increased and this was the main reason why VAR was introduced, since at times the referee does not have a clear view of what is happening, such as a player diving.

Coach 1 This is seen very often. More often than confirming an initial hunch, anecdotally to me at least, it feels like many decisions are being reversed. That, in turn brings up the question as to how much is the referee calling the match vs how much are we leaving to technology and the VAR assistants in the room.

Coach 2 When the decision is clear, the referee usually changes his decision after consulting VAR. As a result, overall decision making has improved.

Coach 3 I'm not sure but I think that is a few compared with the ones that the decision is reinforced.

Journalist I'm not certain what the ratio is in percentage terms, but what I would say is that the referee should still be getting the majority of calls correct regardless of VAR, as would befit his status as a referee. What I'm saying is VAR shouldn't be his/her crutch during the game. A decision made should almost always be the correct one, and if that's not the case, it would suggest that the official isn't up to the job in the first place. Those marginal calls that invoke VAR are really only his safety blanket so to speak.

Journalist I'm not sure, but I think there are statistics available with details on that kind of stuff.

Journalist Don't have the exact figures...A couple of times, I guess.

4.3.2 Findings

What has been the contribution of VAR towards improving respect between players in Spain in terms of behavior among other aspects of the game?

Respect

In your opinion has respect improved between players with the introduction of VAR for instance do we still see players diving and pulling the shirt of the opponent during matches? Please state why?

The Video Assistant Referee (VAR) has been used in Spain for a full season and is now in its second season.

In the interview with a retired referee respondent based in Europe, he states that:

“It has improved as there are fewer occasions now when players feel that they have been ‘cheated’ by the opponents – wrong decisions are overturned and when there is, for example, an allegation of simulation to gain a penalty kick but the VAR confirms the correctness of the penalty kick then the sense of injustice and robbery disappears.

Equally, players treat each other with more respect physically as they know that violent conduct and serious foul play will be punished, even if it is initially undetected by the referee. There is thus a decline in these offences”.

The respondent agrees to the fact that respect between players has improved on the field of play now each and every single one of their actions are being monitored by the VAR. The respondent points out that violent conduct will be punished meaning that a player cannot afford to throw about an elbow to an opponent as it was in yester years as this action will be punished incase the center referee misses it during play.

Player 2 plays in the Moroccan Premier League but follows Spanish football week in week he states that:

“To a small extent it has. Players are cautious while playing against each other because they now have it in mind that VAR can see every small detail on the pitch throughout the 90 minutes.”

The player suggests that players are now take a more cautious approach in the game keeping in mind that every single detailed is being

reviewed. The player states that it has not improved entirely but to a certain degree respect has improved.

Question 2:

In your opinion have off the ball incidents reduced with the introduction of VAR meaning that do we still see players using their elbows and pushing the opponent during matches? Please state reasons why?

In the interview with a retired referee respondent based in Europe he states that:

“Yes, as I just said, players treat each other with more respect physically as they know that violent conduct and serious foul play will be punished, even if it is initially undetected by the referee. There is thus a decline in these offences.”

The referee suggests that off the ball incidents have reduced in the Spanish game now that there is video footage to go back to in case of any unsporting behavior that has gone on during play such as a player throwing an elbow at an opponent or shirt pulling that normally goes on in the penalty box during set pieces.

Player 3 plays in the Moroccan Premier League but follows Spanish football week in week out he states that:

“The off the ball incidents in my case have reduced due to players knowing they shall be penalized even if the referee doesn't see, due to the introduction of VAR, such as tackling of players that do not have the ball but are in perfect positions to receive the ball such as counter attacks.”

The player suggests that there is no more room for tactical fouls in the modern game now that there are cameras and an experienced referee watching every move on the pitch, in the past a player would commit such fouls to break up play and prevent a goal from being scored. This is unsporting behavior and there is no element of respect for the opponent.

Coach 2 is attached to one of the FC Barcelona Football academies around the world and is an ardent follower of the Spanish League, he states that:

“Yes, it has. Confrontations between players and teams due to match officiating have reduced. This is because of the perception that the decisions being made are more accurate with the reviews being done. Players

therefore get on with the game more than they did in the past. VAR has therefore helped improve respect between players.”

The coach suggests that the degree of respect has improved among the players in the Spanish League because they have the perception that with the referee being assisted with technology and an extra referee in the Video Operation Room (VOR) decisions are reached with much more accuracy and precision unlike in the past when the decisions were reached in real time and there was no chance of turning them back. Once the referee made the decision that was it and it could have a significant impact at the end of a game or season.

Journalist 3 is a sports journalist and follows European football on top of being a sports editor at one of the major news outlets on the African continent, he states that:

“Yes, they have. It is actually the reason why most teams are going for zonal marking at set pieces and not the good old fashioned man marking. They are aware that VAR will flag them down for any off the ball contact”

The journalist suggests that teams are going for a more cautious approach in the game now for fear of giving away fouls if they go for the traditional way of defending set pieces, they risk giving away a penalty or free kick as they will be tempted to pull the shirt of the opponent as they challenge for the ball.

Question 3:

How often do we see players question the referee decisions now that there is VAR this as when players do not agree with the decisions that referees make during matches?

Referee 1 is a retired FIFA referee based in Europe he states that:

“Dissent is still prevalent in the game and I am beginning to see players signal the rectangle requesting the referee to look at the pitch side monitor”

The comments above indicate that the players are not satisfied with the decisions being reached on the field of play and would prefer that the referee takes another look of a particular incident via the pitch side monitor. This is the only way they will be convinced that a decision is accurate and I

believe they want to play with the mind of the referee so that a decision is over turned to their team's advantage. This is common when it comes to awarding penalty kicks as we see in the modern game players want to win or get points at whatever cost because such a decision could be pivotal in how a game pans out.

Player 2 plays in the Moroccan Premier League but follows Spanish football week in week he states that:

“It has increased tremendously to a point that Rugby Union rules might have to be adopted which allow only the team captain to seek audience with the match referee not all players on the pitch”.

The above comments suggest that to tackle the problem of dissent only the team captain should be allowed to talk to the referee so that players do not surround the referee. Emotions always run high during games so it is bound to happen but if the Spanish Football Association should implement a law that suggest so to curb the vice of dissent in the Spanish to flight. This is an indicator that there is no respect shown to the referee by the players. Such incidents are normally seen in highly charged games such as the El Clasico or derbies.

Coach 2 is attached to one of the FC Barcelona Football academies around the world and is an ardent follower of the Spanish League, he states that:

“Players will always question refereeing decisions, especially because most decisions are subjective. However, with VAR, players do not question the decisions as much as they did in the past. Definite decisions like whether a player was offside or not cannot be questioned anymore”.

Journalist 1 is a free-lance football journalist based in Spain and content editor at FC Barcelona. In regard to respect he states that:

“You’ve still got the issue of players surrounding the referee, which has got to stop, however, he now has the authority to be able to say ‘hold on, this is being reviewed,’ and there’s little that the players on the field can do about it. I think the intimidation factor has been taken away which is a good thing, and we’ve seen that even if players and coaches still don’t agree with the VAR, they’ve got no choice but to accept it. That’s resulted in a lot less problems, albeit VAR still does need streamlining and it will evolve over time”

The comments above suggest that dissent is still prevalent in the Spanish League as players are still not satisfied with the decisions the center referee makes on match days. The comments further suggest that the referees are not intimidated anymore by players let alone the crowds now that they are aided by the VAR. Both players and coaches might not agree with the decisions reached as everyone perceives the game differently but at least there is less room for controversy.

Fair play

Question 1: Do you think VAR has brought about Fair play in La Liga, do we see players committing less fouls during matches?

Referee 1 is a retired FIFA referee based in Europe and states that:

“Any piece of technology that improves decision making will bring about fair play. However, you appear to think that integrity of officials is in doubt. I frankly do not believe that they are human and will make errors”.

The fact that incidents can always be monitored will promote Fair Play in the game, incidents such as simulation will go down because it is a bookable offence and can lead to a player being suspended for the next

game or being sent off. So this means that players will not go down to get favors from the match officials and get an advantage for their team. However, we cannot entirely rely on VAR as it was designed by humans and there is still an element of error, it can only improve on the decision making process.

Journalist 2 is a Barcelona correspondent working for a top European news outlet, he suggests that:

“I think it’s been quite good in La Liga, much better than in the Premier League, for example, withstanding the odd controversial decision. I remember seeing several VAR decisions go against Real Madrid and Barcelona and thinking: ‘There’s no way those decisions go against the big clubs pre-VAR.’ So, in that sense, I think we are seeing a fairer Liga, although some of the smaller clubs may still not believe they get enough decisions their way”.

The argument here suggests that justice is served during games unlike before when there was no video aided technology. Certain teams might have some decisions go against them because they are playing at a certain stadium or because it is a certain player that is involved in a

particular incident. Barcelona's Luis Suarez has always been accused of diving from time to time and might get a decision go against him because the referee's mind is programmed to think that there was not enough in a challenge.

Question 2: In your opinion what are some of the issues concerning Fair Play that VAR has dealt with making reference to dissent and simulation among others?

Referee 1 is a retired FIFA referee based in Europe he states that:

“VAR has improved the levels of accuracy around Penalty kicks” This indicates that it will be difficult for a referee to award a penalty if a player deliberately does down in the penalty box or for the match officials to award a penalty if a player handles the ball in the penalty box basing on where his hand is/was when the ball strikes his arm. Some of the debate that comes up when a penalty is awarded for handball is whether the hand was in a natural position or not or whether the player made his body bigger to stop the movement of the ball.

Player 2 plays in the Moroccan Premier League but follows Spanish football week in week out he states that:

“Cases such as awarding false penalties, as well as giving the right red cards in case of dangerous tackles”.

The Spanish League is one of the most competitive in Europe and has some of the most talented players in the world meaning that some of these players will do anything to win a game for their clubs from diving in certain areas of the pitch to win a free kick in a dangerous position or a penalty. With VAR, this will reduce as the officials cannot be easily coerced into blowing for such incidents.

Coach 3 is a FIFA licensed coach ardent follower of the Spanish League, he states that:

“Unfair decisions that can lead to win or lose games. Maybe a player diving in the penalty area to win a penalty or a handball that might play in his team’s favor”

The comment is inclined towards simulation. Players doing anything to win games, this could be down to the fact that the game has become so

commercialized with players getting winning bonuses among other things when they win certain games. Betting as well is a vice in the sport where betting companies come up with all sorts of odds that see games being twisted in all sorts of ways.

Journalist 2 is a Barcelona correspondent working for a top European news outlet, he suggests that:

“As mentioned above, it’s helped give decisions against the big clubs which maybe wouldn’t have happened before: marginal off sides, penalties. I can understand why as an official, especially at the Bernabeu or Camp Nou, it can be hard to give marginal calls against Madrid and Barcelona”.

Big clubs no longer have the competitive advantage over the smaller clubs, decisions are reviewed and there is more justice more than before. Referees in the past could be intimidated by players, managers or the crowds at certain stadia such as Camp Nou or Bernabeu but today that is not the case as there is a video review system that referees can make use of the technology. At times crowds can be intimidating to players and they can easily influence decisions going in their team’s favor.

Question 3: In your opinion has the players discipline improved now on the field now that there is VAR? has the level of fouls reduced or off the ball incidents. Please indicate why?

Referee 1 is a retired FIFA referee based in Europe he states that:

“No - sadly one area that VAR is not covering is the ever increasing problem of acts of simulation”

Even with VAR being introduced in Spanish football, players still take a chance by diving to win fouls, this can be because of the competitive nature of the league with teams trying to outdo each other to win the championship, to qualify to play in the European club competitions such as the UEFA Champions League and the UEFA Europa League as well as trying to beat relegation during the latter stages of the season when all points are precious and could be the difference between survival and relegation.

Player 3 plays in the Moroccan Premier League but follows Spanish football week in week out he states that:

“I do not think it has improved since we are seeing more players being sent off, as well as off the ball incidents where players start pushing each other, when they have lost their tempers”

Football is a game of emotions and highly charged matches such as derbies and El Clasico will definitely arouse players’ emotions to have a go at one another. This leaves the referee with little or no choice but to send off players in order to bring the situation under control.

Transparency

Question 1: What is your opinion on the way decisions are reviewed during matches, is it satisfactory for the spectators, are they involved when decisions are being made?

The referee is a retired FIFA referee based in Europe he states that:

“I think that better communication within the stadium is needed but this depends very much on the culture of football in each country – showing replays of incidents that have been reviewed can work well in some countries but in others it would lead to massive spectator problems”

Spectators need to be made aware of how certain decisions have been reached by displaying the replay on the giant screens in the stadia. This will go a long way of making the spectator aware of how decisions have been reached. It must be noted that football is a game of emotions but Spanish football has no major cases of stadium violence like it is in many parts of the world such as Africa and certain regions in Europe.

Journalist 1 is a free-lance football journalist based in Spain and content editor at FC Barcelona. In regard to respect he states that:

“On a personal level, I would prefer that either each contentious decision is reviewed via the screen at the side of the pitch, or the work that the VAR is doing is seen on the big screen rather than just a ‘Goal’ or ‘No Goal’ decision. I think supporters are confused as to why some decisions are made and haven’t understood the process of how the officials have come to their decision”.

Every decision should be put out there for the spectator to see on match day, this will go a long way in reducing the criticism VAR has reduced amongst the spectators because they are kept in the dark when the referee is communicating with the VAR or reviewing a particular incident

via the pitch side monitor. Spectators are an integral part of the game and are probably the reason why clubs exist because of the gate collections and the merchandise that they buy so I believe it is only fair that they are shown or involved in the communication between the referee and the VAR and the review of the incidents via the pitch side monitor.

Question 2: What can be done to ensure that the review system is improved during matches? How can spectators be kept in the know of what is happening?

Referee 1 is a retired FIFA referee based in Europe, he states that:

“I believe that to improve the system the use of big screens and the ability for the spectators to witness the interrogation of the decision making process will improve its use. The referees’ conversation with the VAR should be transmitted inside the stadium just like rugby union”.

Spectators need to be made part of the decision making process in matches because they are important stakeholders in the game. Not involving spectators will only raise more questions about the technology in its early stages, the spectators have the right to know what is going on between the

referee and the VAR because they have paid money to be in the stadia and should not be kept in the dark for whatsoever reason.

Player 2 plays in the Moroccan Premier League but follows Spanish football week in week out and states that:

“Replays while decisions are being reviewed should be shown in the stadia because the people watching at home have the luxury to do so while the fans that have paid money for the live experience don’t get the opportunity to see what the officials in the VAR studio are reviewing and why certain decisions have been taken”

Transparency is a fundamental factor in football for all stakeholders – they must be made aware of each and every single detail that goes on in the game because of the passion they show for their teams on a weekly basis. Not involving the spectators on how decisions are reached can have a significant outcome at the end of the game as the crowd can end up influencing certain decisions of the referee because of an earlier decision he might have made that they did not agree with. Showing replays on giant screens in the stadia can be one way of solving the problem.

Coach 3 is a FIFA licensed coach ardent follower of the Spanish League, he states that:

“Maybe by showing what the referees are seeing on the stadium screen to provide more information to everyone attending to the game”

I believe the best way to bring transparency into the game with regard to the VAR is to adopt the TMO system that is used in rugby. It shows all replays via the giant screen in the stadium and leaves less room for contestation for those watching in the stadium. Right now the VAR is undergoing a lot of scrutiny because it is still relatively new but as time goes on it is only natural that it will improve.

Question 3: What do you think is the spectators view on how decisions are reached using VAR, do you think they could be involved in the decision making process during matches?

Referee 1 is a retired FIFA referee based in Europe, he states that:
“They should be involved more in the process through the use of the big screens”

I believe The International Football Association Board (IFAB) should implement a law that requires all decisions be displayed on the giant screen so that spectators can have a much better perception of the technology because it seems like the system is scoring low on the transparency aspect as unlike people watching at home, those in the stadium will never know how a decision has been reached.

Player 2 plays in the Moroccan Premier League but follows Spanish football week in week out and states that:

“Spectators in the stadium do not get the chance to review the decision unlike those watching at home, so as earlier mentioned replays should be shown in the stadia via the giant screens”

We might see a reduction in the attendances on match days because of the continued frustrations the fans might have over VAR – being kept in the dark with the decisions. I believe the fans might be better off catching the game in the pub or in the comfort of their living rooms because the replays are broadcast to those watching on television. The quicker this issue is dealt with the better it is for all those involved in the game and in particular Spanish football.

Journalist 3 is a sports journalist and follows European football on top of being a sports editor at one of the major news outlets on the African continent, he states that:

“The spectators are kept in the dark. VAR should borrow from the openness of TMO in Rugby and DRS in Cricket where the fans are kept in the loop as to what is informing the video referee’s decision”

The technology is bound to face a fair share of criticism in the early stages of its implementation but those that are in charge should use it as a learning curve to improve it so as it stands for what it was introduced for. Rugby’s TMO system which many are using as a reference point faced criticism during the early stages but it improved with time – only time will tell for the VAR in football.

Question 4: How often do we see the referee reverse his decision after consulting with VAR technology?

Player 1 plays in the Moroccan Premier League but follows Spanish football week in week out and states that:

“Very often especially when it comes to offside calls”

Allowing a goal to stand that has an element of offside in it can be a very controversial issue in football. In the past, referees could not get away with it because they were expected to be spot on with each and every single one of their decisions and spectators and fans would never take the excuse of “referees are human, they make mistakes!” So much has always been at stake at a football game and now with the referees having technology to aid their decisions, goals from offside positions should be history. With VAR all goals must be reviewed. This in a bid to iron out such errors.

Coach 1 is attached to one of the FC Barcelona Football academies around the world and is an ardent follower of the Spanish League, he states that:

“This is seen very often. More often than confirming an initial hunch, anecdotally to me at least, it feels like many decisions are being reversed. That, in turn brings up the question as to how much is the referee calling the match vs how much are we leaving to technology and the VAR assistants in the room”

There is debate as to whether the referee has lost the power he has over the game. Skeptics argue that the human element has been taken out of

the game but in reality, VAR is actually run by a human being. Yes, there is so much technology involved in the game today but the human element has not gone away for whatsoever reason probably that is why we are still seeing errors in the game like it was before. It must be noted that VAR was never to achieve 100% accuracy but to be fair, it has gone a long way in improving decisions despite the fact that it has fallen short on some occasions.

Table 13

Respect

Expected Response	Unexpected Response
<p>I do believe that we are still in the infancy with regard to the use of VAR. Improved accuracy of decision making with the aid of technology will be one of the drivers to reduce dissent and improve the interaction between</p>	<p>No- I think that we have seen very little use of VAR technology helping to reduce off the ball incidents. We have to secure more data to measure results over a period of 2/3 seasons.</p>

match officials

Yes, they have reduced. I think so because I am sure players are briefed by their coaches to be precautionous in whatever they do with or without the ball because every action and movement is being watched.

I guess so, but again without the statistics for red cards it is hard to give a definitive response. I think players are obviously aware that their actions, even if unseen, can now be picked up by VAR and lead to dismissals. But, at the end of the day, a lot of these moments in the past have been instinctive, in the moment actions, and maybe VAR is not always in your head in that case.

Dissent is still prevalent in the game and I am beginning to see players signal the rectangle requesting the referee to look at the pitch side monitor.

Players did so a lot before and now it is even more common and frustrating because the upside of doing it is so large whereas there is potentially no downside for

questioning the referee or asking him to check with VAR on multiple occasions.

Table 14

Fair Play

Expected Response	Unexpected Response
I think it's been quite good in <i>La Liga</i> , much better than in the Premier League, for example, withstanding the odd controversial decision. I remember seeing several VAR decisions go against Real Madrid and Barcelona and thinking: 'There's no way those decisions go against the big clubs pre-VAR.' So, in that sense, I think we are seeing a fairer Liga, although some of the	Any piece of technology that improves decision making will bring about fair play. However, you appear to think that integrity of officials is in doubt. I frankly do not believe that they are human and will make errors.

smaller clubs may still not believe they get enough decisions their way.

VAR has improved the levels of accuracy around Penalty kicks

It's cut down the influence that players and managers may think they have over the officials if they surround them in an aggressive manner. Though they would never admit it, it's been blindingly obvious in the past that officials have waved a card or two at the behest of certain players. Off sides have also been called 100 percent correctly since VAR's inception, which has to be a good thing.

There are still initial protests but then the players seem content to wait for the outcome of the VAR review including the referee going to

Again, I don't know that it has per se. Certain elements of player behavior has improved, but VAR will never, for instance, come

do an on-field review. Of course not everyone agrees with the final post-review decision but the acceptance levels are much higher than before VARs were introduced

into a defenders thinking if he's last man and an attacker is running in on goal. He'll be brought down and the defender will 'take one for the team' whether VAR exists or not. The surrounding of the official on the pitch needs to be eradicated completely. At present, at least we have a scenario where perhaps players are not as aggressive around a referee as they once were, with all waiting to hear the decision 'from upstairs.' VAR has therefore taken some of the heat out of certain situations.

Table 15

Transparency

Expected Response	Unexpected Response
In the England Premier League there appears to be a lack of improvement in the use of the pitch side monitor. I believe that if the IFAB criteria on the use of monitors is not applied then the decision is taken away from the referee. Law 5 is clear that the sole decision maker is the referee.	I think it's fine but could be made. Rugby's TMO system seems good.

To improve it for the officials themselves, as well as education of referees, VARs and players/managers, it has to be sped up. To have to wait 2-3 minutes for a decision isn't helping anyone. To improve it for supporters, maybe take their cue for rugby. Supporters of that sport often have an earpiece or small radio which automatically picks up the referee's frequency. They can hear the officials explain their decisions. Maybe that could be an alternative in football.

Most match-going fans I speak to don't like it. They feel in the dark as they don't know what's going on when a decision goes to

replays should be shown in the stadia via the giant screens.

VAR. They also feel it kills the buzz of a goal: you never know if it's going to stand or be ruled out. I know people that go to fewer games now because of VAR.

I'm not certain what the ratio is in percentage terms, but what I would say is that the referee should still be getting the majority of calls correct regardless of VAR, as would befit his status as a referee. What I'm saying is VAR shouldn't be his/her crutch during the game. A decision made should almost always be the correct one, and if that's not the case, it would suggest that the official isn't up to the job in the first place. Those marginal calls that invoke VAR are

This is seen very often. More often than confirming an initial hunch, anecdotally to me at least, it feels like many decisions are being reversed. That, in turn brings up the question as to how much is the referee calling the match vs how much are we leaving to technology and the VAR assistants in the room.

really only his safety blanket so to
speak.

Chapter 5. Conclusion

5.1. Summary

This chapter contains the results of the analysis, connects the analysis back to the research questions, and demonstrates consistency of the analysis with grounded theory methodology. Twelve participants were interviewed for this grounded theory methodology study.

Limitations are also discussed and recommendations are presented.

5.2 Qualitative data analysis

This study concentrated on the Impact of the Use of Technology Based Referee System in Football, with an eye on the Spanish Premier League. The literature review was concentrated on the evolution and history of technology in sport.

Research was undertaken on the debut season of the VAR technology in Spain. The intention was to unpack whether the technology has stood for the three fundamental elements which sport or soccer in particular stands for – Fair Play, Transparency and Respect.

5.3 Discussion and Interpretation of Findings.

5.3.1 Answer to Research Question 1?

The first research question investigated the extent to which respect has improved among the players plying their trade in the Spanish top flight.

A number of conclusions can be drawn from the results presented in chapter four and which can be related to the first research question.

Although the sample from which data was gathered is small, I am of the opinion that the results still provide meaningful findings in regard to the subject matter.

The in-depth interviews revealed that respect between the players has generally improved now that there is an extra set of eyes monitoring whatever is happening on the field. This means that the players are playing by the rules and will not do anything that will go against the rules of the game and not going out to hurt the opponent. This involves off the ball incidents such as throwing elbows or spitting at an opponent or any form of violent conduct on the field.

I found out during the research that respect does not or should not only stop with the players but should go to the center referee as well. Players should not surround the referee when he makes a decision but should instead go on with the game and respect what the referee has said as the final word lies with him/her.

5.3.2 Answer to Research Question 2?

The second research question investigated whether VAR has promoted Fair Play among players plying their trade in the Spanish top flight.

I believe that there is a thin line between Fair Play and Respect in football, the two are somehow intertwined and they go hand in hand. This is about showing true sportsmanship towards the opponent.

VAR has however failed to address the issue of Fair Play in Spain. Players still go down easily to win penalties despite the fact that the referee will have a second look at the incident via the pitch side monitor or will get clarification from the VAR as to whether it was contact or the player dived to win the penalty.

I believe this is due to the fact that the league is competitive and players are desperate to do anything to win the game whether it damages their reputation or not.

5.3.3 Answer to Research Question 3?

The third research question investigated whether VAR has been transparent enough in the Spanish top flight.

I believe that VAR reviews should be made more transparent to all those that are in the stadia. The spectators should be kept in the know as to what informed the referee's decision to make a particular call. This is the case in rugby but in football spectators have no clue as to what is being communicated between the referee and the VAR.

A majority of the interviewees are of the view that a similar approach like that of rugby is adopted in football so that spectators are not kept in the dark when it comes to decision making.

Interviewees are also of the view that replays should be displayed on the giant screens so that no one is kept in the dark as to how a particular decision has been reached. Spain does not have a history of crowd violence

like it is in certain parts of Europe like Italy so this by all means is no recipe for disaster.

It must be noted that VAR is facing a lot of criticism in many football circles but this is a teething problem and can only improve with time this has led to spectators threatening to stop going to the stadia, but with some reforms, their opinions are bound to change.

What can be said about whether VAR has been transparent in the Spanish top flight is that it has failed to scale the required heights of transparency.

5.4 Research limitations

Based on the data collected from the survey, three limitations.

The first limitation was getting players that play in the Spanish Premier League let alone in Spain. The way to go around this was to talk to players that play professional football in Morocco that follow Spanish football as it is also one of their ambitions to play in Spain sometime during their careers.

The second limitation was getting coaches that are attached to the Spanish Premier League. They are as expected hard to come by because of their busy schedules. However, I managed to get coaches that are attached to one of the Barcelona academies around the world. They follow Spanish football and are knowledgeable about the sport as well as the laws of the game.

Referees that are active in Spain were a challenge, but as an alternative I interviewed former FIFA licensed referees based in Europe as no one is better placed to discuss the laws of the game better than them.

5.5 Future work

The research indicates that the technology is still a long way in being transparent or involving spectators in the decision making process. It must be noted that the technology is still in its infancy all over the world and such constraints might be addressed with future studies.

An interesting future study could be about the technology in the English Premier League in its first season as week in week out the flaws in the technology are being pointed out by critics.

5.6 Conclusion

Any new implementation will always face a fair share of criticism from all corners especially if it is interfering with the natural flow or pattern of something like it has been witnessed with the Video Assistant Referee (VAR).

In order for the technology to see less criticism and be embraced by football enthusiasts, the spectators must be involved in the decision making process as they are major stakeholders in the game and it is not fair on their side to be kept in the dark when the referee makes certain calls during games.

In conclusion I believe that the technology was a good implementation in football as it has brought about Fair Play and justice in the sport

I do think that the main driver for the introduction of VAR is to improve the accuracy of decision making around the four areas - goal/no goal decisions, penalty/no penalty decisions issuing of direct red cards and not second yellows as well as cases of mistaken identity.

However, it is not aimed at achieving 100% accuracy and its method of operation should be minimum interference - maximum benefit

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APPENDIX

Appendix 1: Interview Questions

Video Assistant Referee (VAR) made its debut in *LaLiga Santander* in the 2018/2019 season. The technology was introduced to uphold the three elements that define soccer (Transparency, Fair Play and Respect). This study is conducted by a student at Seoul National University in the Department of Physical Education to examine to what extent the technology has upheld the elements that soccer stands for.

RESEARCH QUESTIONS

1. What has been the contribution of VAR towards improving respect between players in Spain in terms of behavior among other aspects of the game?
2. What has been the contribution of VAR towards improving Fair Play between players in Spain in terms of players diving on the field among other aspects of the game?

What has been the contribution of VAR towards improving Transparency in the game in Spain, besides the referees are other stake holders involved in the decision making process?

1.Respect

- In your opinion has respect improved between players with the introduction of VAR meaning that do we still see players diving and shirt pulling going on during matches? Please state why?
- In your opinion have off the ball incidents reduced with the introduction of VAR meaning that do we still see players using their elbows and pushing each other during matches? Please state reasons why?
- How often do we see players question the referee decisions now that there is VAR this as when players do not agree with decisions that referees make during matches?

2.Fair play

- Do you think VAR has brought about Fair play in La Liga, do we see players committing less fouls during matches?

- In your opinion what are some of the issues concerning Fair Play that VAR has dealt with (diving in particular)?
- In your opinion has the players discipline improved now on the field now that there is VAR, has the level of fouling or off the ball incidents reduced? Please indicate why?

3.Transparency

- What is your opinion on the way decisions are reviewed during matches, is it satisfactory for the spectators, are they involved when decisions are being made?
- What can be done to ensure that the review system is improved during matches meaning that the spectators are kept in the know of what is happening?
- What do you think is the spectators view on how decisions are reached using VAR, do they think that they are involved in the decision making process during matches?
- How often do we see the referee reverse his decision after consulting with VAR technology?

Appendix 2: Thesis Approval Letter

기술기반 축구 심판 시스템의 효과성

탐색 :

스페인 축구 리그 VAR 심판 시스템 케이스를

중심으로

본 연구는 스페인 프리메라에서 사용된 기술기반 심판 시스템인 VAR(Video Assistant Referee)의 효과성에 대한 탐색을 목적으로 하였다. VAR 을 이용한 심판 시스템은 2018~2019 시즌 동안 스페인 리그에서 적용되었다. 이 기술은 경기 중 판정에 대한 논쟁을 줄이기 위해 보다 정확한 판정을 내릴 수 있도록 돕기 위해 고안 되어

도입되었다. 본 연구는 축구를 대상으로 이 기술이 선수간의 상호 존중, 공정한 플레이, 그리고 투명성부분에서 어떠한 효과가 있었는지 밝혀냈다. 이를 위해 질적 연구 방법을 차용했으며, 구체적으로 12 명의 참여자를 대상으로 인터뷰하였다. 12 명의 참여자는 스페인 프리미어리그의 심판, 언론인, 코치 및 선수들이다. 인터뷰를 통해 수집된 자료는 전사하여 분석에 이용되었으며, 이후 연구자에 의해 응답의 의미를 분류하고 분석하였다. 결과적으로 VAR 이 스페인 리그에 도입되었을 때 선수들은 행동을 감시하는 카메라의 존재 때문에 서로간의 페어플레이와 존중의 플레이가 향상되었다고 응답하였다. 특히 팔꿈치를 사용하는 폭력적인 행위의 반칙플레이에 대한 고려가 많아 졌다고 보고 하였다. 또한 VAR 기술은 심판으로부터 파울을 얻기 위해 헐리우드 액션을 통한 시뮬레이션 반칙의 문제를 해결하고자 하였지만, 이 부분은 해결하지 못하였다고 한다. 그

이유는 아직 심판이 VAR 이 무엇을 어떻게 분석 해야 할지에 대해 아직 미숙하기 때문이다. 본 연구의 결과에 따르면, 심판들은 더 정확한 결정에 도달하기 위해서 기술을 언제 어떻게 사용해야 할지 숙련 되어야 하는데, 이를 위한 특별한 교육과정이 필요함을 도출할 수 있었다.