



# **ASHESI UNIVERSITY**

## **CAN TECHNOLOGY IMPROVE THE DEVELOPMENT OF CLUB FOOTBALL IN GHANA?**

### **UNDERGRADUATE THESIS**

B.Sc. Management Information Systems

**Jesse Tetteh Ayenor**

**2020**

**ASHESI UNIVERSITY**

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**Supervised by: Dr. Stephane Nwolley**

## **UNDERGRADUATE THESIS**

Undergraduate Thesis submitted to the Department of Computer Science,  
Ashesi University in partial fulfillment of the requirements for the award of  
Bachelor of Science degree in Management Information Systems.

**Jesse Tetteh Ayenor**

**2020**

## DECLARATION

I hereby declare that this Undergraduate Thesis is the result of my original work and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature:

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Candidate's Name: Jesse Tetteh Ayenor

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Date: 11/05/2020

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I hereby declare that the preparation and presentation of this Undergraduate Thesis were supervised in accordance with the guidelines on the supervision of Undergraduate Thesis laid down by Ashesi University.

Supervisor's Signature:

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Supervisor's Name: Dr. Stephane Nwolley

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Date: 20/04/2020

.....

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## **Abstract**

Football is a global sport. It is the most-watched and most played sport in the world. It is also capital-intensive. In recent times, with the influx of new technology, football has taken a giant leap globally into popularity and improved the standard of living of many of its stakeholders. It is also regarded as a lucrative business. This research investigates how technology can support or improve the development of club football in Ghana. This paper highlights the recent technological advancements in the world, how it can be applied to football, and more specifically how it can improve Ghana's football especially at the club level. The objectives of this research are to highlight the state of football in Ghana, investigate how technology can improve club football in Ghana, and to recommend ways to increase the positive and decrease the negative impact(s) that technology has on club football in Ghana. The study involved research and intense analysis of the literature available on technology and how it has improved football, the reasons for technological advances in football, and how it can be applied to Ghana's football. The absence of official websites of most local-based football clubs was also studied and it serves as the theoretical framework for this research. The research involved gathering data using quantitative methods. Data was collected from football stakeholders in Ghana, including footballers, administrators, coaches, football agents, and individuals in the media sector. This dissertation serves as the first major study on technology and how it can be used to improve club football in Ghana, though other studies have been conducted concerning football and national development, the rise of football agencies and its impact on football in Ghana and lastly improving the football industry in Ghana through franchising, licensing and merchandising. This study provides insights into the role of technology in football, the different ways it could be used to improve club football in Ghana, and which technological solution(s) could be proposed to effect some changes.

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## **Chapter 1: Introduction**

Technology has created globalization in the realms of football and making the transition of news updates, player transfers, and events in football easier and faster from one vicinity to another. However, these technological advances have not made their way into our part of the world (Ghana). This has caused football in Ghana to trail behind in the fast-paced competitive sporting advancement race.

Football is a well-known sport that is played in almost all countries. 4.76 % of the world's population refers to the game as "soccer" [3]. The game of football emerged from a combination of some outdoor activities that date back as far as the second and third centuries. The earliest form of the game which has scientific backing hints that the game was an exercise from a military manual in China [4].

In most developing countries (Ghana), football is one of the main sources of entertainment [5]. It serves to many as a stress-reliever, an avenue to meet new people and "a means of escaping from the harsh realities of life" [6].

Football as a game has changed drastically from its original fixture to date. Its rules have experienced that same effect. From playing on a dimensionless rocky surface to a dimensional 90m to 120m green terrain surface with white markings. From having no referees like it was in 1871 to the use of video assistant referees in 2018. The influx of technology has had a great influence on the "game that is much loved" [7].

There has been an introduction of some notable new technologies like the goal-line technology, virtual offside lines, video assistant referees, electronic performance and tracking systems, etc. Also, most top-notch businesses have integrated supporting football teams into the business models. This serves as a source of revenue for them through advertisements, sponsorships, etc. Football has been revolutionized technologically. Most

foreign countries are using technological inventions to modernize the game and to get more publicity. Its advertisement has evolved from print to electronic media such as email and notifications on mobile applications. Ghana is yet to adopt these advertisement strategies” en masse”. Hence, this paper seeks to explore how technology can be used to improve club football in Ghana.

## **1.2 The origin of football**

The specific date and place of the origination of the world’s most popular sport: football is not certain. However, some historians think otherwise and affirm that there was some kind of game played over 3000 years ago that involved a ball. “The origin of the game has been speculated as being from China, Japan, Egypt, or even Ancient Greece. However, it was later developed in England. In 5000 B.C, there was a game played by kicking a leather ball stuffed with fur” [8]. It is similar to football because, in that game, the use of one’s hand to touch the ball was prohibited. It was named “Tsu Chu”. Another evidence shows that a similar game was played in Egypt in 2500 BC. It involved a ball being played by young women. There is not enough information describing the rules of their game, but an inscription found in a tomb indicates that a ball was involved. The Japanese had their version of the game, called “Kemari” [9]. It also involved the use of a ball. Unlike the previous versions, the “Kemari” ball was stuffed with sawdust. The arena was demarcated with four trees. Centuries after, the first football game was played in Britain among the locals which started after a “legendary game that involved the kicking of a severed Danish Prince’s head” [9]. It was banned in 1331 by King Edward III of England after it caused a spike in injuries and violence. In 1605, football regained its legality status in England.

England and Scotland were recorded to have played the first-ever official international football match in 1872. It ended in a goalless draw. An international football body was formed in 1904 to govern the game of football. It is called the “Fédération Internationale de

Football Association (FIFA)” [10]. Known as FIFA for short. Many amendments were made to the initial set of rules of the game, it was set at Cambridge University in the early 1800s. The first world stage tournament, which was popularly known as the “World Cup”, was hosted by Uruguay and they are recorded to be the first winners of the competition in the year 1930. It is now played every four years from the initial year in different parts of the world. In a world mainly dominated by men, football was mainly played by them. But when feminism arose in the latter part of the 1900s, we saw the inaugural tournament of the Women’s World Cup. The maiden edition took place in 1991. It was hosted by China, but the United States of America took home the gold. Some commercial lights have started to gleam into the realms of football. It has made the game a bit predictable however it still upholds onto its fun aspects.

### **1.3 Opportunities that emerge from football**

The growth of football has opened a pool of diverse career opportunities to the world. Some universities around the world are offering courses like sports broadcasting, sports financing, sports journalism, sports law, and many more. Africa had a glimpse of the world’s attention in 2010 when South Africa hosted the 2010 FIFA World Cup. This opportunity boosted the economies of most African countries especially through tourism and improved the image of Africa globally. An article by Smith states that “the evolution of football has seen it open up well-diversified job opportunities for a large group of people. During the World Cup 2010 in South Africa alone, 150,000 jobs were created” [11]. These job opportunities were for construction workers and architects, groundsmen, event planners, cleaners, gardeners, and others. Once the commercial fields of football were ignited, its stakeholders have received a fair share of wealth, with about 120 % increase in investments in the previously ended FIFA World Cup held in Russia last year. This huge investment and evolution have been “attributed to the intense marketing strategies and planning that football

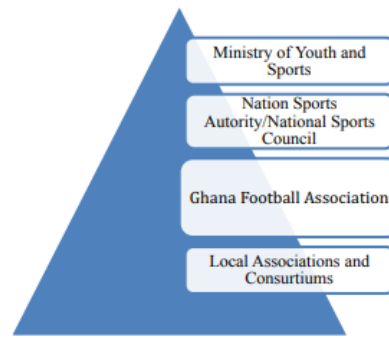
has received over the years especially in English football. It now serves as a benchmark for the global game which now attracts over 2 billion spectators yearly” [12].

Football in Ghana is not just a mere game but an opening to greater heights and escape path out of the poverty brackets. Most of our prominent national team players, such as Asamoah Gyan, Stephen Appiah, and Michael Essien, have used it to exhibit their God-given talents. Nowadays, most of the youth in Ghana allocate most of their time playing football on school parks, with the hopes of achieving center stage opportunity to play at the global stage. The increasing number of youth players has created a niche in the employment sector through football agencies. These agencies seek to be the middlemen linking European football giants and youth players in the country.

#### **1.4 Administration of football in Ghana**

In Ghana, the administration of Ghana involves every citizen because their taxes are used to finance the national teams. With most football clubs and organizations lacking an online presence, it is difficult to obtain information about them. The Government is mostly involved in the affairs of football administration through the Ministry of Sport and the National Sports Council. The Ghana Football Association only serves as a representative body of FIFA. However, it is FIFA’s administrative body that acts to ensure that all football-related activities adhered to the country’s rules and regulations.

*Level of public institutions that govern football*



*Figure 1: Source: Authors Construct*

The figure above depicts the organizational administrative structure of football in Ghana in the public sector.

The Local Associations and Consortiums are responsible for the organization of the football leagues and its administrative running as well as the day-to-day activities of the football league.

## **1.5 Introduction of technology in football**

It is perhaps not surprising that technology has paved its way into football. The technology was introduced into the footballing world in 2001 [13]. According to Michael Platini, “the game is a lot faster now” [13]. So, one of the forums to keep up with this fast-paced sport is through the use of technology. According to Pierluigi Collina, “we live in a world surrounded by technology, and football cannot avoid it. In current times, most football players wear a GPS device that monitors the distances they covered on the pitch.



*Figure 2: GPS device for monitoring distances covered by players*

Source: (Fifa, 2015)

The figure above is the GPS device that players wear during matches to monitor the distances that they are covering. Four years ago, the increase in global technological advances led to the introduction and implementation of the goal line system, (also known as goal-line technology). It is used to detect balls that cross the goal line and the ones that do not. Figure 3 shows what the Goal-line technology looks like.



*Figure 3: Goal-line Technology.*

Source: BBC



The figure above i.e. Figure 3 is one technology that has been long-awaited by football stakeholders, especially footballers because in the past wrong goal-line decisions have been made that did not favor them. Also, it has been awaited because of the long history of cheating/ errors by referees in matches. The technology is used to signal the referees when the ball crosses the goal line completely. There had been several instances where goals were denied because referees could not determine if balls had completely crossed the goal line or not. Hence, the video assistant referee (popularly referred to as VAR) was also introduced into football to aid referees with the most compelling decisions [14].



*Figure 4: Video Assistant Referee (VAR).*

(Source: FIFA, 2015)

“A performance analysis software has also been introduced. It is used to collect data on teams to make both qualitative and quantitative analysis” [15]. To add on, the wireless communication system for referees in Figure 5; is a system that assistant referees use to communicate with the infield referees to make constructive decisions [16].



*Figure 5: Wireless Communication System.*

Source: (axiwi, 2019)

Many other technological inventions have been adopted by FIFA to enable football games to be free and fair to all.

## **1.6 Research Question.**

This thesis seeks to identify the main technological innovations that drive the development of club football in foreign countries in today's world, and how they can be replicated in Ghana to aid advance our club football. This would be achieved by addressing the question below:

- Can technology improve or support the development of club football in Ghana?

## **1.7 Research Objectives.**

The purpose of this study is to determine which technological model (website) will assist in the development and administration of club football in Ghana and if some customization may be necessary. Some significant objectives that need to be achieved include:

- Identifying both the technical and non-technical loopholes that are affecting the development of club football in Ghana.
- Outlining the strategies that stakeholders of football in Ghana are using to develop the sport.
- Identifying the benefits that would arise when technological advances are introduced into Ghana's club football.
- Investigate the reasons for the lack of technological advancements in Ghana's club football.
- Determine how the introduction of technological advancements and innovations can affect football clubs in Ghana.
- Recommend ways to increase the positive and decrease the negative impacts that technological advancements may have on club football in Ghana.

## **1.8 Research Relevance.**

Moore's Law states that "the number of transistors on a microchip doubles every two years, though the cost of computers is halved" [26]. This law states that we can expect changes in technology at a fast pace. And with the drastic changes in technology, football is getting its fair share, and this has led to some rules in the game to change. The international leaders in the sport agreed to incorporate technology into football after years of resistance in 2012" [18]. However, though the introduction of technology has led to some controversies on and off the pitch, it is still deemed in high esteem because it has made the game fair. This dissertation would be analyzing the rise of technology in football and how technology has developed football in the countries that efficiently utilize it, especially at the club level. Also, this dissertation would be identifying the benefits that would arise when

technological advances are introduced into Ghana's club football. Lastly, this dissertation would be analyzing the state of club football in Ghana, why the current state persists and how can we use technology to resolve the problem(s) of the current state of club football in the country.

The attention that football has gained globally has one eminent factor being the influx of technology. It has led to football fans and enthusiasts:

- wanting highly entertaining games and,
- football clubs wanting to have the best players signed

One of the aspects of technology in the media, the introduction of the print media in 1986 increased the publicity of football, however, most of these publicities were within a certain vicinity. From the introduction of the internet in the early parts of 1990 to the introduction and rise of social media in 2003. According to an article by Douglas Karr, "93.3% of global sports leaders have the belief that their engagement with social media has grown their fanbase exponentially" [19]. From the same article, it is recorded that, "61 % of sports lovers view sports online" [19]. This is to affirm the hypothetical thought that, the recent publicity and spread of football all over the world have been through social media, which is a huge countenance of technology. This new phase of technology encourages companies like Hawk-Eye Innovations and Nautic Devices to provide VAR (video assistant referee) technologies and referee communication systems respectively to FIFA. With the great investment made by FIFA, these companies can make large sums of revenue and enable football to be fair and exciting simultaneously. These various aspects of technology all play a significant role in today's football, and this dissertation would help highlight the benefits

that these various aspects of technology will aid in the development of club football in Ghana.

## **Chapter 2: Literature Review**

Football has always been important to Ghana's sports culture. Journalist, Jeffrey Toobin writes that "the game that captivates the rest of the world- where it" can make or break both the psychological and the economic sectors of a nation" [20]. An article by Roxane Coche highlights how the US football federation used Twitter to promote women's soccer in 2011. This work provides the strategies that were used on social media - specifically, Twitter - by the US Soccer Federation to promote women's soccer (particularly the US Women National Team (USWNT) for soccer). The strategy that was incorporated by the US football federation was to create three Twitter accounts. These accounts broadcasted to fans and enthusiasts' updates on the happenings and events that took place with the US Men National Team, the USWNT, and the US Football Federation as its governing body. The article did not highlight any particular methodology adopted to cement its findings. However, it emphasized the fact that "interactivity which is an aspect characterizing the internet" [20]. It is a key strategy that the Federation and the national teams could use to get feedback from fans and enthusiasts. The main motive of interactivity in social media is to encourage these national teams and the federation to establish a two-way communication system with their fans. One argument generated from this article is that there is some gender disparity when it comes to the publicity of football in the United States. With the majority of attention skewing towards the male national (USMNT) with little or to no attention been accorded to the female national team (USWNT) except "once every four years".

The introduction of social media as an aspect of technology in football has exposed us to floods of useful football information. Some of this information includes transfer news, live score lines of played matches, and updates on club events. "The creation of social media

provides an excellent window for professional football teams to enhance their understanding of their fan base and encourage interactions with the football product” [21].

“The frequency and intensity of the interaction between the footballing body and their respective fans accompanied their ever-increasing worldwide audience is due to the rise of social media” [22].

“The internationalization of football is a reality in the modern age. Professional football teams have expanded their reach and have attracted fans and the media from all over the world” [28], “while transnational broadcasting contracts and sponsorships have furthered their global exposure” [23].

This has led fans to form or maintain bonds with a foreign-based team, despite not being in or near those countries geographically. Kerr and Gladden [24] refer to such football enthusiasts as “satellite fans” and contend that, through the use of new communication tools, these fans establish brand communities and have an impact on the brand equity of their chosen team. Their study investigates the effects that social media interaction had on the brand association of football teams. It provides hints on the degree to which social media is a subset of football’s newly adopted technologies. The article used qualitative analysis to interpret its quantified data and incorporated a t-test inferential statistic to interpret their findings. The results showed that some social media websites had more reception of brand attribution than others.

To conclude, the results from the study revealed that, “the majority of fans, both local and international, respond to product-related posts regarding team success and star player(s), while club’s history and tradition and fans are the most popular non-product-related posts” [22].

These strategies are used on social media to post-football updates of both the local teams and the national team. It may elevate football in Ghana to meet international standards. Besides, the influence of social media could increase Ghana's national revenue streams and attract more fans to patronize football in Ghana especially at the club level,

Due to the limited literature on technology and football development in Ghana, articles from foreign countries would be inferred in my analysis. There is no article making a comparison between technological advancements and how it has improved football, however, there is an article tackling the effects that social media has had on football. This article does not feature any African country or even Ghana. So, my research would be to analyze the recent state of club football in Ghana, investigate how foreign football associations develop their club football and how technology can be used to scale-up club football in Ghana.

Technology has created globalization in the realms of football and making the transition of news updates, player transfers, and events in football easier and faster from one vicinity to another. However, these technological advances have not made way into our part of the world (Ghana). This has caused club football in Ghana to trail behind in the fast-paced competitive sporting race.



## **Chapter 3: Methodology**

### **3.1 Overview of Methodology.**

Globally, the best football teams have increased their worth through the use of technological advancements. In this research, the fundamental idea is to uncover the optimum methods or ways in which club football in Ghana can employ these technological advancements to improve its state. The previous chapters of this research have highlighted the concepts of how technology has been introduced into football and its benefits. It has also captured the idea of shining some technological lights into the current state of Ghana's club football.

Therefore, this study would explicitly concentrate on how foreign "football teams are making the use of analytics, social media to improve their status level in football" [25]. The impact of technology especially social media has led to an increase in the incomes of most football teams through revenue fees and royalties. The 2014 World Cup that took place in Brazil is considered "the most social World Cup in history" [25]. This is because, most people around the world relatively on Twitter, Facebook, and other social media sites started talking about it before the first game.

Recent development as shown that," technology and some social media powerhouses, such as Twitter, Amazon, and Facebook, have been acquiring rights for streaming sports" [25]. Halfway through 2018, Amazon secured streaming rights to broadcast 20 football matches of English Premier League giants, Manchester City. They also premiered an original docuseries called "All or Nothing" [25].

### **3.2: Problem Identification**

The phase of identifying this topic as a suitable fit for research was deduced from the current standings of the state of club football in Ghana. A series of investigation, literature review, and fact-finding to provide an appropriate validation that the above is an existing problem and it's worth studying and attempting to resolve.

### **3.2 Research Design.**

In this research, only a quantitative data gathering approach was used. The data gathering was to be sequential from quantitative preceded by qualitative data. Due to the recent pandemic of the COVID-19 and reshuffling process of the executives of the Ghana Football Association, the qualitative method of gathering data was not possible. But, the quantitative data was successful. It was collected using well-structured questionnaires and a descriptive analysis was conducted to identify the stakeholders of club football in Ghana. Descriptive and analytic statistics offer one a summary of the expected behavior of the sample which can then be inferred on the population [34].

#### **3.2.1 Primary Data.**

In the view of the paucity of related research that pertains to club football in Ghana, the research understudy, the majority of the data gathered for analysis and interpretation was done primarily. For the same reason, a thorough investigation through questionnaires was conducted to ensure that the primary data was credible and appropriate to the study.

Questionnaires with the key stakeholders of club football in Ghana were used to gather the information that served as a representation of the views of the general public. The key stakeholders include; the media, football fans, and enthusiasts, football players, and coaches.

### **3.3 Research Scope.**

#### **3.3.1 Study of Population.**

Football players, fans and coaches, governing groups, football clubs, the media, and Ghana Football Association (GFA) executives are the stakeholders of football in Ghana. They also comprise the population of this study. The research was conducted within a timeframe of five weeks.

### **3.4 Sampling Strategy**

#### **3.4.1 Sampling Techniques**

The quantitative aspect of this research included purposive sampling which involved intentionally “choosing a participant due to the qualities that he or she possesses” [27]. Using this approach enabled me to acquire a straighter-more forward and profound response to my research question.

The qualitative side of this approach was to target the direct stakeholder of football in Ghana. It included football managers, players, fans, etc. This would have enabled me to get results based on demographics and experiences.

#### **3.4.2 Sample sizes**

The sample size for this study was huge because almost everyone in Ghana has a direct or an indirect affiliation to football. The plan was to have about 50 respondents from each sector of the stakeholders, i.e. fifty respondents from fans, those in the media, etc. The participants responded to questions that divulge their sentiments about the state of club football, ways in which technology could be used to change club football in Ghana.

### **3.5 Data Collection Methods.**

#### **3.5.1 Questionnaire**

The data was collected using questionnaires to capture the perceptions of the key stakeholders of football in Ghana on the subject; what is the current state of club football in Ghana, what can be done to improve its state, and can technology be used in the changing process.

### **3.6 Research Population.**

The population of this research was made up of members of the Ghana Football Association, football players, coaches, sponsors of football in Ghana and football fans and enthusiasts.

## **Chapter 4: Discussion of Findings and Analysis**

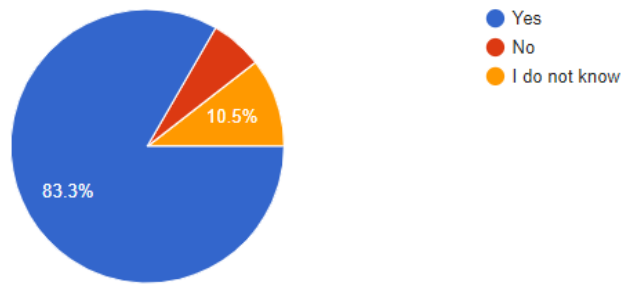
### **4.1 Introduction**

This chapter synthesizes quantitative data from the stakeholders of club football in Ghana. Some of these stakeholders, include GFA Executive, Football fans and enthusiasts, professional footballs, media personnel, etc. The objective of the quantitative aspect of this research is to develop plausible policies on how best technology as a developmental facet can be used to improve club football in the country. A standardized questionnaire was the data collection tool used to gather the numerical or quantitative data from each stakeholder. The results of this study would assist in enriching the value of club football and stand as a pivotal benchmark in increasing the awareness, patronage, and the development of Ghana's club football. An analysis of the findings of the quantitative research of the project was illustrated largely using graphs. Furthermore, literature would be used to support the attained results. Ultimately, by offering deductions targeted at increasing fan-player interactions and brand scalability," the problem of plummeting stadia attendance and the loss of talent to foreign leagues can be limited" [34].

### **4.2 Summary of collated responses**

Numerous questionnaires were distributed via social media namely, WhatsApp, Twitter, Instagram, and Snapchat but only 162 responses were returned. Out of the 162 respondents, only 83.3% identified that there is a problem with club football in Ghana. A little over 10 % were unsure so they sat on the fence. Their data is rendered unusable for the study. Figure 6 indicates the graphical representation of the respondents who were able to recognize the problem(s) in club football in Ghana.

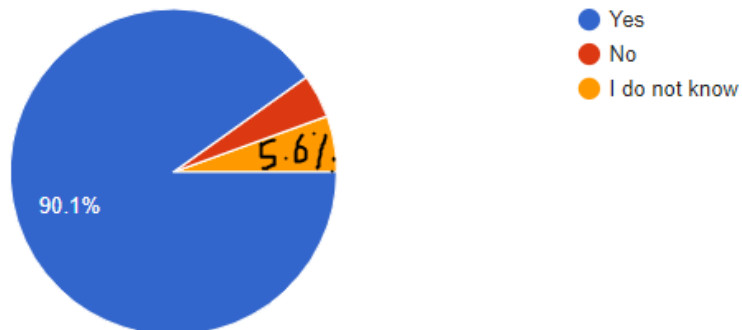
162 responses



*Figure 6: The graphical representation of the respondents.*

Following that was a question that said, “Do you think technology can be used to change the state of club football in Ghana?” 90% of the respondents answered with “Yes”. This means that the use of technology can change the state of club football in Ghana. 5.6% responded, “I do not know” while the rest responded “No” but failed to state any apparent reason. Figure 7 is its graphical representation.

162 responses



*Figure 7: Response to whether technology can change the state of club football.*

An articulated dataset was used where each stakeholder group had representation. This was to prevent the result from been skewed in a certain direction. Below shows the different stakeholder segments with their respective respondents.

Stakeholder	Sub-Population	Sample size	Targeted Sample Size	Method Used
Football Administrator (GFA, Minister of Youth and Sports)	120	10	20	Questionnaire
Football Sponsor	10 (Only 3 sponsor the league)	2	3	Questionnaire
The Media	354	15	20	Questionnaire
Professional Footballers	667	25	50	Questionnaire
Football Fan and Enthusiast	Data were unavailable.	100	100	Questionnaire

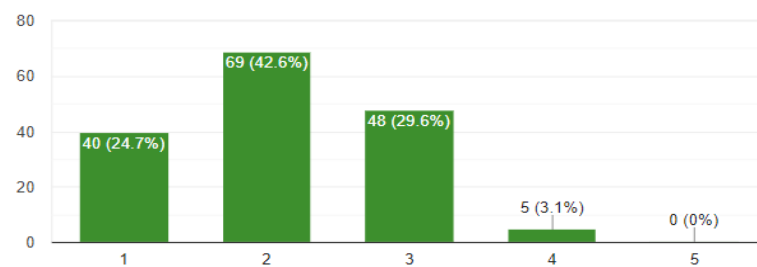
*Figure 8: A breakdown of the stakeholder respondents.*

Figure 8 breaks down the stakeholders who took part in the quantitative research. The table shows the targeted sample size and available sample size as well as the sub-population of each stakeholder group.

Nevertheless, a slight factor that tilts the research towards a particular feature was the lack of responses from professional footballers i.e. of whom this project concerns most. This research was set on attaining responses from this important facet of the research to ensure that the results seem more representing. But unfortunately, they were very difficult to pin down. This is because the league had just resumed and players were in their respective training facilities.

### 4.3 Quantitative findings.

Responses gathered were from a large spectrum of individuals who may or may not be fans of club football in Ghana. In investigating the state of club football in the country, a question about the state of club football was posed in the questionnaires. All 162 respondents took time to key in their response to the question; “Rate the state the club football in Ghana?” The diagram below indicates the respondent's distribution:



*Figure 9: Response distribution for rating the state of club football in Ghana*

According to Figure 9, the numbers (i.e. 1-5) on the x-axis are the ratings that the respondents used to rate the state of club football in Ghana. 1 and 2 represent the rate “doing bad” with 1 indicating “doing very bad” while 4 and 5 represent “doing well” with 5 indicating “doing very well”. 3 stands for mediocre. The diagram shows that over 50% specifically (67.3%) of all respondents rated the state of club football in Ghana below mediocrity (i.e. doing bad). This is enough evidence to back the claim that, the state of club football in Ghana is poor.

To differentiate between the actual football fans and enthusiasts from others, and to distinguish between the football fans and enthusiasts who would think technology can change the state of club football in Ghana and those who think otherwise. An exploratory data analysis technique of categorical-quantitative was used, specifically a contingency table.



	I do not know	No	Yes
Football Administrator	0	0	10
Football Fan and Enthusiast	9	5	91
Football Player	0	2	4
Football Sponsor.	0	0	2
I do not follow football	0	0	1
N/A	0	0	1
Non-observer, neutral person	0	0	1
Professional Football Player	0	0	19
The Media	0	0	17

*Figure 10: A contingency table representing the primary role of respondents in Ghana's football and their opinion on technological change.*

Each respondent was asked the question, “Do you think technology can be used to change the state of club football in Ghana?”. To respond to that question “Yes” or “No” or “I do not know” multiple-choice answering platform was made available. 146 of the respondents chose “Yes” signifying that they strongly think that technology can be used to change the state of club football in Ghana. Only 7 of the respondents opted for “No” and 9 of them just had no idea so they chose “I do not know”. Using R studio as a data analysis tool, which is an integrated development environment for R, a programming language for statistical computing and graphics. I was able to distinguish between each stakeholder in Ghana's football i.e. football administrator, football fan and enthusiast, etc. who chose “Yes”, “No” or “I do not know” to the question stated above. The football fans and enthusiasts who comprise of 64.8% of all respondents had 91 of them choosing “Yes”. Following that was one of the main stakeholders of the sport in Ghana, the professional footballers, they had 23 of them choosing “Yes” and only 2 choosing “No”. To conclude, per the analysis above, I can strongly state that, “Technology can be used to change the state of club football in Ghana”.

Furthermore, to answer the research question of this thesis, “Select the technological advances that could be used to promote club football in Ghana” was posed to the respondents in the questionnaire. The diagram below showed their responses.

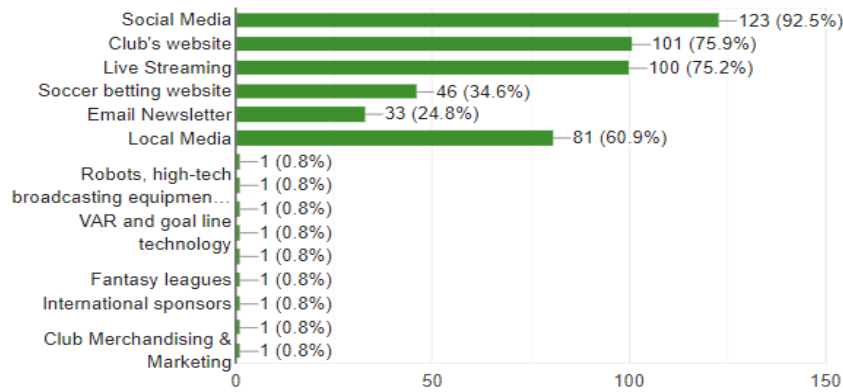


Figure 11: A contingency diagram showing the technological advances that could be used to promote club football in Ghana.

From the above figure, “Social media” was the most prominent technological advancement that could be used to promote club football in Ghana. It was postdated by “Club’s website” it had 101 out of 133 respondents opting for it. This represented 75.9 % of all responses to this question in particular. “Live Streaming” was the last significant technological advancements that had over 100 respondents opting for. According to the analysis made above, I can strongly state that the three main technological advances that could be used to promote club football in Ghana are “Social Media,” Club’s website” and “Live Streaming”.

To further analyze the data above, a sample of 15 was imported into R studio for an in-depth analysis. The top three choices of the responses are as follows.

	Local Media	Soccer betting website	Social Media	Social Media;Club's website
Football Fan and Enthusiast	1	1	11	3
Football Player	0	0	0	1
N/A	0	0	0	0

Figure 12: A contingency table showing the top three choices of selected respondents.

The above result snippet shows the top three choices of some selected respondents. It shows that Social Media and Club website were the top two from the sample. This shows that to promote club football in Ghana through technological advancements; Social Media and Club websites are the top two to consider.

#### **4.4 Existing strategies used by existing football clubs in Ghana.**

Foreign leagues have huge publicity coverage which extends worldwide. This strategy has made its league presentable and watched by many. This strategy has not been meted out in Ghana to even attract its citizens about the league. To the extent that, people in the country have little or no idea of an existing football league. An article from Business & Financial Times Online states that “Ghanaian clubs admittedly, are yet to fully reach their business potential” [29]. With a league that has been running for over two decades, that is quite appalling. Ghanaians state that “Football is the nation’s passion” [30]. Yet little or no passion is shown towards our football league. According to BBC, since 2013, football clubs globally have taken advantage of technology to build their teams’ reputation, reach fans, and even have a two-way interaction platform with fans.

With football taking its business tenure, most teams are using social media as a way of reaching out and mobilizing their capital resources. This is not the case of any Ghanaian football club because no football club in Ghana has a club website. “The two most influential and populous football clubs in Ghana, Asante Kotoko and Accra Hearts of Oak amongst six other football clubs are the only ones that have an official Twitter account” [30]. They do not have an official club website. “The other populous social media platforms like Facebook, Instagram, and even YouTube where one can upload team videos, footage from behind the scenes, etc. no football club in Ghana has one. This can account for one of the reasons why club football in Ghana has low patronage.

#### **4.5 Analysis of quantitative data.**

From all analysis made above, it shows that 83.3% of the sampled respondents have identified a problem with club football in Ghana, 90.1 % believe that technology can be used to change the state of club football in Ghana. Lastly, to solve this problem “Social

Media, Club's website and Live Streaming should be inculcated into the Ghana Football Association's new policies. Because these can play key roles in revolutionizing the current state of club football in Ghana. Although, Social Media and Club's website are the two prominent technological advancements.

## **Chapter 5: Recommendations and Conclusion.**

### **5.1 Recommendations**

In defining the best contexts in which club footballing in Ghana can climb to the top of the leaderboard as one of the best and also get most of the nation involved in it as it is in countries like England, Spain, France, etc. And lastly, get global recognition, the following are recommendations on how football clubs in Ghana can develop business environments, get recognized, get funding, and aid promote the league.

Fundamentally three suggestions can help to achieve this:

1. I would recommend that every football club in Ghana have an official account on all social media platforms i.e. Twitter, Facebook, Instagram, Snapchat, YouTube, etc. This is one way to mobilize fans and supporters to their games. Social media is an interactive platform and a two-way communication system. This causes supporters who become followers of the clubs the chance to get official updates directly from their clubs. They also get the chance to interact directly with the club's executives, players, etc. through the comments sections on the various social media pages of the clubs.

A sense of belonging and value from the club can be gained by the supporters which makes them feel part of the club such as harnessing the sense of responsibility to support the clubs.

The availability of social media platforms for all football clubs in Ghana can help them attain the needed exposure to football club sponsors. This gives the football clubs the leverage to negotiate with club sponsors to get the right financial benefits from these companies (sponsors).

2. I would also recommend that every football club in Ghana builds a reputable and functioning website. Football clubs can put their ticket prices, training schedules, interviews, and match day activities on the website as well as interviews from coaches and players, promotions by the clubs. They can also put their club replica jerseys, headlines from the club's newspaper, and any other relevant information that can generate the interest of their followers. Furthermore, these football clubs can direct traffic to their websites and that of their sponsors. This can generate a lot of mentions for the sponsor on the website and then increase the brand presence of club sponsors on their social media as well.
3. Lastly, I would recommend that the Ghana Football Association in collaboration with the League sponsors and commissioners as well as the football club presidents come together to build a function and attractive league website which would be used to announce league games, show league table and updates about transfers, rumor transfers and the history of the league. I emphasize on this greatly because the **Ghana Football League has no official website**. Information from the league is on the Ghana Football Association's website which is presumptuous and egregious. This is not particular for most of the populous foreign leagues. Their Football Association's website is different from their football leagues'. Taking England as a case study. Below are facts to cement this recommendation.

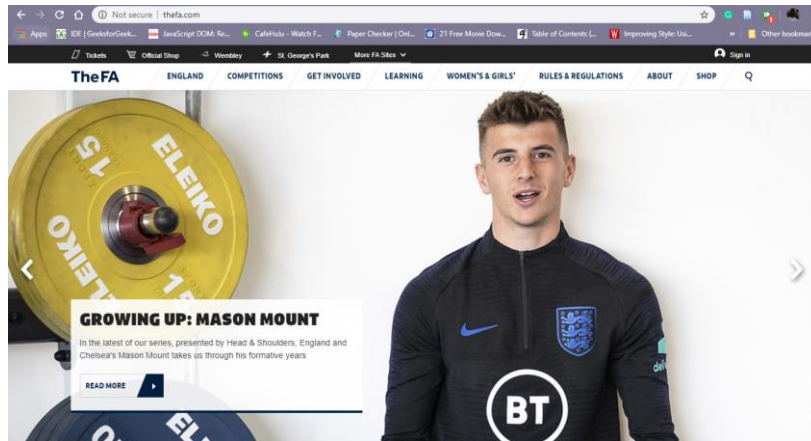


Figure 13: Snippet of the official website of the English Football Association (FA).

Source: [31]

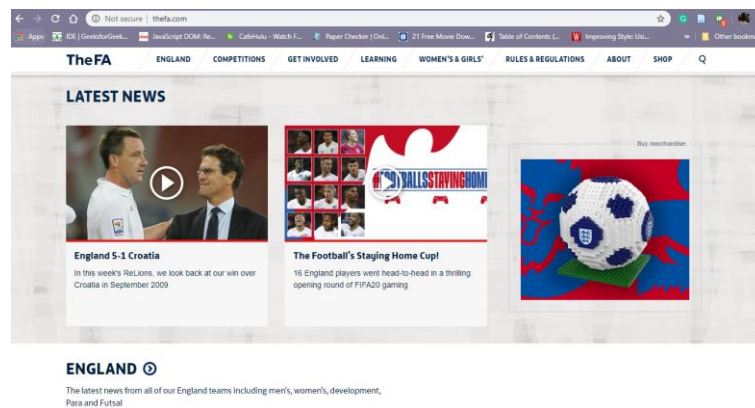


Figure 14: Snippet of the home page of the English Football Association (FA)'s official website.

Source: [31]

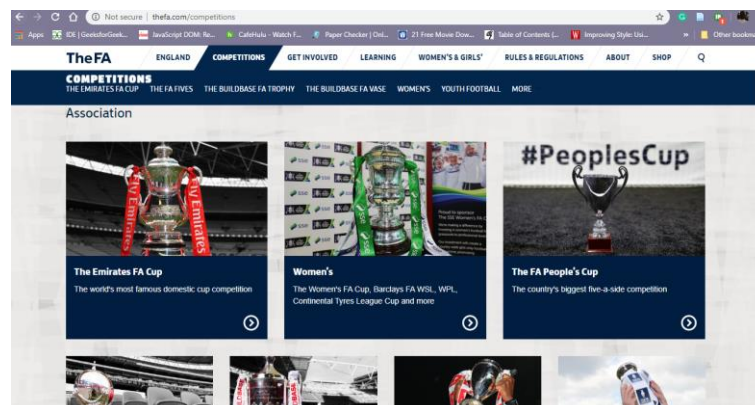


Figure 15: Snippet of the Competitions page of the English Football Association (FA)'s official website.

Source: [31]

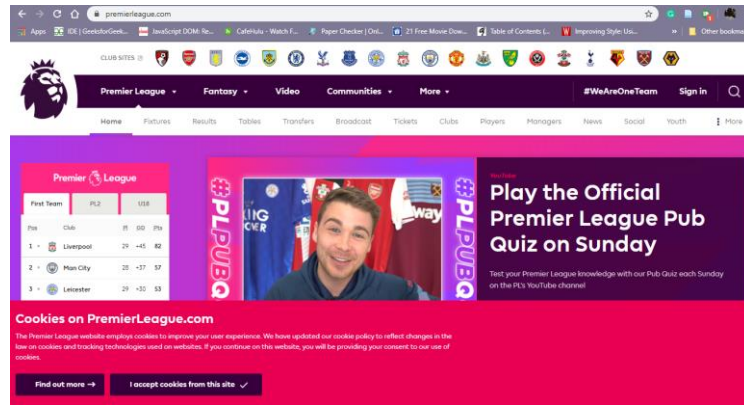


Figure 16: Snippet of the English Premier League's official website.

Source: [32]



Figure 17: Snippet of the home page of Ghana Football Association (GFA)'s the official website

Source: [33]

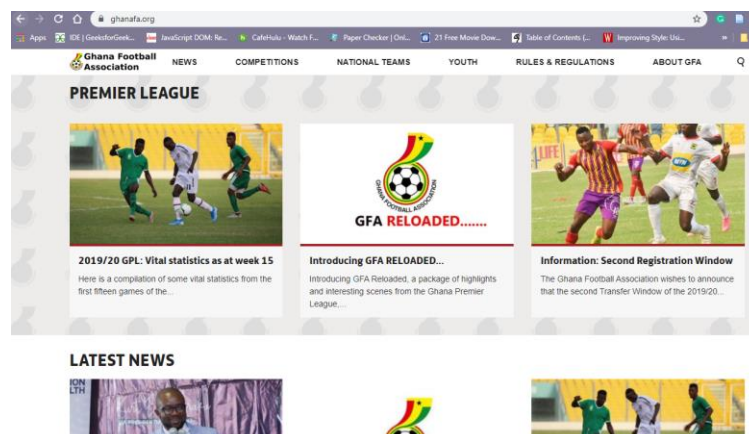
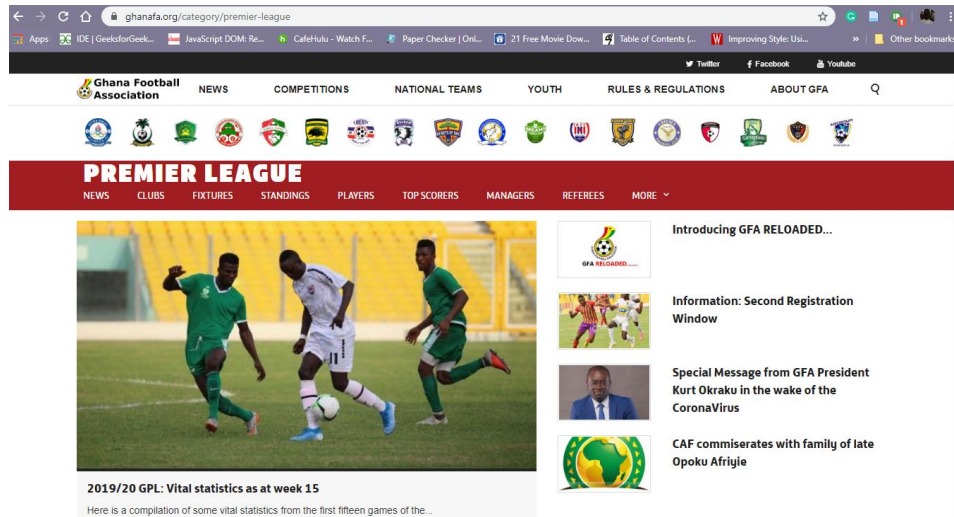


Figure 18: Snippet of the home page of Ghana Football Association (GFA)'s the official website

Source: [33]





*Figure 19: Snippet of the competitions page of the Ghana Football Association (GFA)'s official website.*

Source: [33]

**Figure 13 to 15** shows the home page and the competition page of the official website of the English Football Association. Features from that website make significant mentions only to the country's national teams and not the football clubs in their leagues. **Figure 16** shows all the needed features of the English Premier and makes no mention of the English National Team. This shows the importance that their association has for the football league. Drawing to this part of our world, Ghana, this strategy of promotion is not meted out perfectly because **Figure 18** shows that, the Ghana Premier League has a feature on the official GFA website and does not have a website of its own. This proves that stakeholders of football in Ghana as well as the executives of the GFA need to step up and develop certain basic strategies to promote the league. Because taking advantage of the online streamlines would build momentum for the league's popularity and patronage.

## **5.2 Literature supporting recommendations.**

An article by Rainbow Sackey of Ghana Soccernet stated that” Crystal Palace, a team in the English Premier League permitted their sponsor NETELLER in 2014 to announce the appointment of their new manager. This took place on NETELLER’s official Twitter account. It generated numerous mentions for the club sponsor on social media. A study showed that this is one way where club sponsors can use to get returns on their investments. This announcement on Twitter got so many mentions that made NETELLER got more mentions than any other sponsor in the English Premier League. There were numerous ways where returns were made, some included;

Competitions which made fans to win free tickets to Crystal Palace games, lunch with head coaches and signed shirts. This was a win-win situation for both the football club and the club sponsor.

With millions of conversations happening online daily, football clubs and sponsors can use this approach to get their brands out there and maximize profits.

### 5.3 Proposed Solution.

A proposed solution to answer the research question; would be to develop an official website for the Ghana Premier League. The website would have the following features:

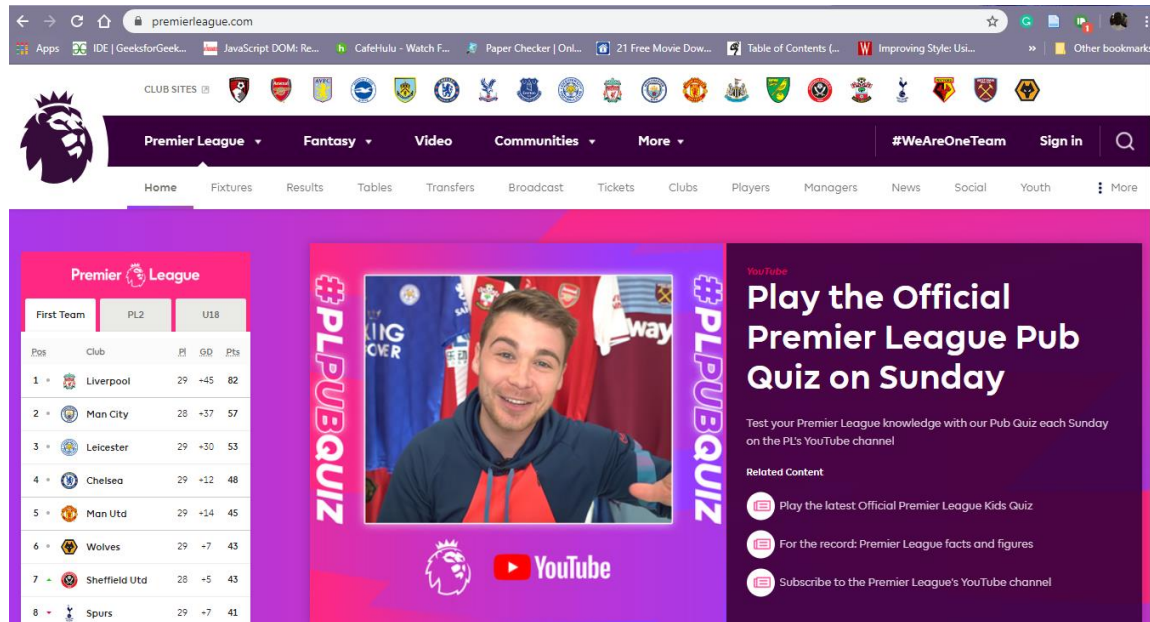


Figure 20: Home Page of the English Premier League official website featuring current happenings and the league standings.

Source: [32]

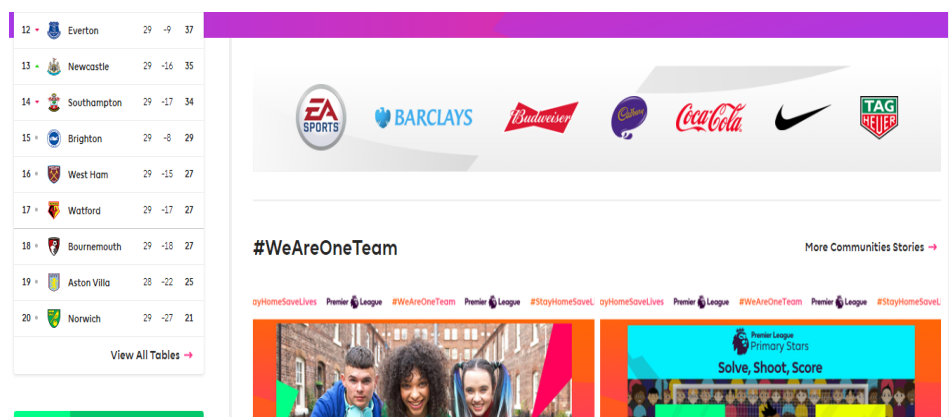


Figure 21: Home Page of the English Premier League official website featuring current happenings and the league standings.

Source: [32]

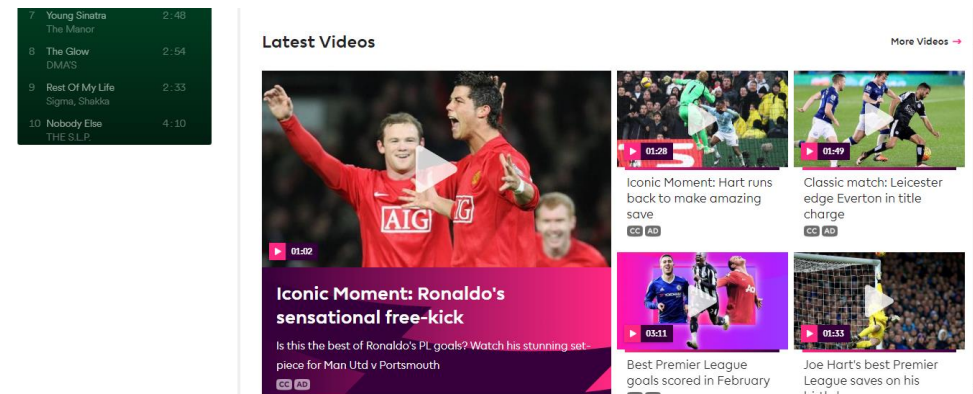


Figure 22: Home Page of the English Premier League official website featuring the latest videos.

Source: [32]

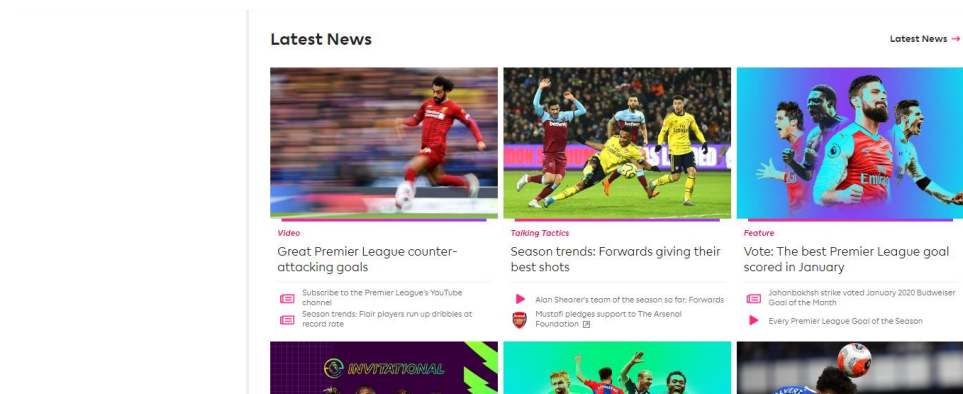


Figure 23: Home Page of the English Premier League official website featuring the latest news.

Source: [32]

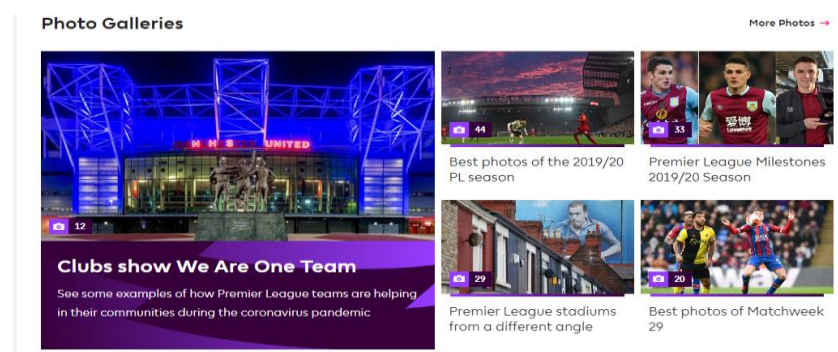


Figure 24: Home Page of the English Premier League official website featuring photo galleries.

Source: [32]

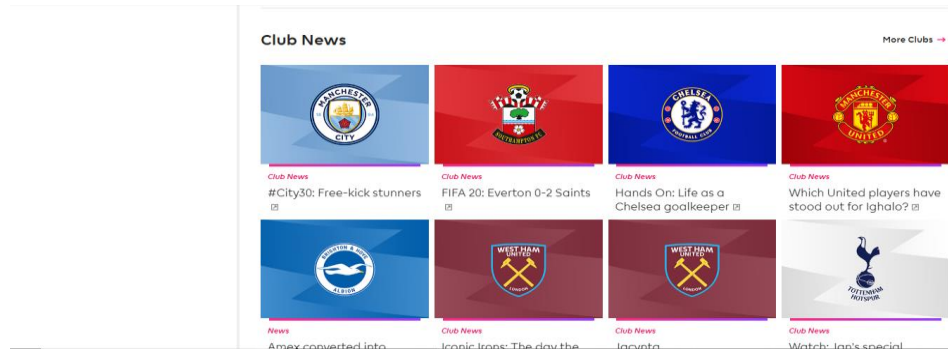


Figure 25: Home Page of the English Premier League official website featuring club news.

Source: [32]

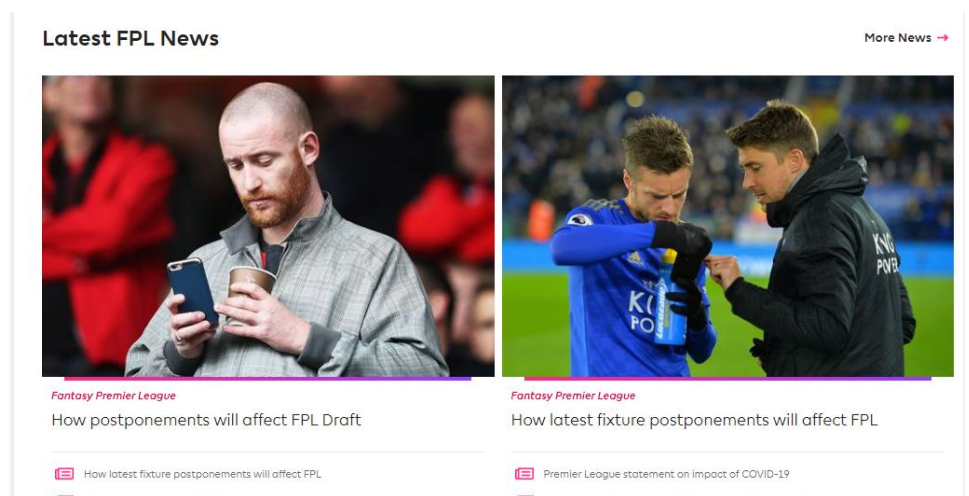


Figure 26: Home Page of the English Premier League official website featuring the latest FPL News.

Source: [32].

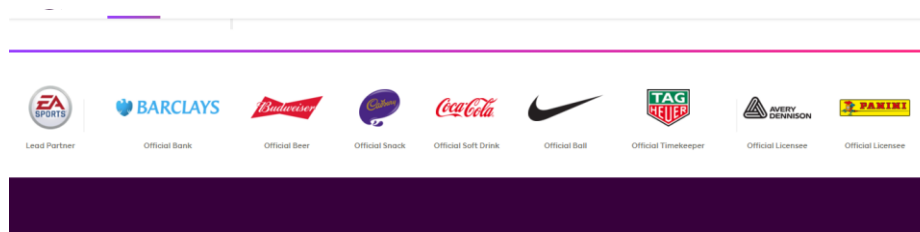


Figure 27: Home Page of the English Premier League official website featuring league sponsors.

Source: [32]

## **5.4 Limitations**

This study was not unremittingly perfect, but a few hindrances were met along the lines of execution. The primary limitation was getting the key stakeholders of club football in Ghana especially the professional footballers to fill the questionnaires during the data collection stage. This hindered the depth of the study regarding the primary needs and concerns of the said key stakeholders.

Secondary to this was getting data that was going to be representative of the entire Ghana football population. There was a limitation of getting the views of those that were not present on social media and also those in the other thirteen regions in the country.

## **5.5 Conclusion**

In getting acquainted with the concept of promoting club football in Ghana, stakeholders of football in Ghana would have to embed the concept of technology and its development into their strategies and proposals. According to my research, there is no official Premier league website and only a few football clubs have an official Twitter account.

Ultimately this research is modeled on a conceptual framework that points to technology as an independent variable and monitors how it affects and it has affected the progressiveness of club football in other countries like England, Spain, France, etc. In the scope of club football in Ghana, these stakeholders of football need to apprehend themselves with global technological changes.

The purpose of this research study is to determine which technological model (website) would be able to assist in the development and administration of club football in Ghana. Secondly, to identify the benefits that would arise when technological advancements are introduced into club football. And lastly, recommend ways to increase the pros and reduce

the cons that technological advancements might bring to club football in Ghana. Illustrating the quantitative analysis used to harness data from the stakeholders of club football in Ghana. Questionnaires were sent out through emails and through the most active social media platforms (i.e. WhatsApp, Snapchat, Instagram, etc.) to answer the research question, “can technology improve the development of club football in Ghana?”

Findings were sampled which represented all of the stakeholders of club football in Ghana. 162 respondents were synthesized to attain some critical findings. Some include; the appalling state of the Ghana Premier League, lack of technical know-how on available technological advancements, and which technological advancements could be used to improve club football in Ghana. After analyzing the collected data, it was deduced that social media, club’s website, and live streaming are three main technological advances that could be meted into new club football policies and strategies to promote club football. Lastly, building a functioning website could be used to promote happenings of the league, help fans to purchase tickets to games, display interviews and match day analyses, etc.

### **5.5 Recommendations for further study**

The following are some recommendations on how one can advance the study of the research question:

1. Investigate the reasons for the lack of technological advancements in Ghana's football.
2. Determine how the introduction of technological advancements and innovations can affect football in Ghana both positive and negative.
3. Outlining the strategies that stakeholders of football in Ghana are using to develop the sport.



## References

- [1] Giulianotti, R. and Robertson, R. (2004). The globalization of football: a study in the glocalization of the 'serious life. [online] Wiley Online Library. Available at: <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1468-4446.2004.00037.x> [Accessed 3 Dec. 2019].
- [2] Hall, S. (2018). Does hosting a World Cup make economic sense? [online] World Economic Forum. Available at: <https://www.weforum.org/agenda/2018/06/world-cup-football-smart-investment-russia-host/> [Accessed 3 Dec. 2019].
- [3] Richter, F. (2018). Infographic: The Global Game of Football. [online] Statista Infographics. Available at: <https://www.statista.com/chart/14329/global-interest-in-football/> [Accessed 3 Dec. 2019].
- [4] FIFA. (n.d.). Classic Football: History. Retrieved 13 October 2019, from FIFA: <http://www.fifa.com/classicfootball/history/game/historygame1.html>.
- [5] Myjoyonline.com. (2019). Multimedia now new home of the Ghana Football Awards. [online] Available at: <https://www.myjoyonline.com/sports/2019/May-2nd/multimedia-now-new-home-of-the-ghana-football-awards.php> [Accessed 4 Dec. 2019].
- [6] Omayma, H. (2013). An investigation into the reasons for low attendance at Glo Premier League Matches in Ghana: A Focus on Accra Sports Stadium. 1st ed. Berekuso, p.8.
- [7] Conolly, P. (2019). Kosovo fans reminded us why we love football by giving England incredible welcome. [online] GiveMeSport. Available at: <https://www.givemesport.com/1522335-kosovo-fans-incredible-england-welcome-reminded-us-why-we-love-football-so-much> [Accessed 4 Dec. 2019].
- [8] Wood, R. (2008). Soccer History Timeline. [online] Topendsports.com. Available at: <https://www.topendsports.com/sport/soccer/history.htm> [Accessed 3 Dec. 2019].
- [9] Footballhistory.org. (2019). The history of football (soccer). [online] Available at: <https://www.footballhistory.org/> [Accessed 13 Oct. 2019].
- [10] FIFA.com. (2019). History of Football - The Origins - FIFA.com. [online] Available at: <https://www.fifa.com/about-fifa/who-we-are/the-game/index.html> [Accessed 13 Oct. 2019].
- [11] Smith, A. D. (2010, May 23). World Cup blow for South Africa as foreign fans stay at home. The Guardian. Retrieved from <http://www.guardian.co.uk/football/2010/may/23/world-cup-visitor-blow-tosouth-africa>
- [12] Orejan, J. (2011). Football/Soccer History and Tactics. McFarland

- [13] Nlandu, T. (2019). The Fallacies of the Assumptions Behind the Arguments for Goal-Line Technology in Soccer. [online] Taylor & Francis. Available at: <https://www.tandfonline.com/doi/abs/10.1080/17511321.2012.745896> [Accessed 13 Oct. 2019].
- [14] Football Technology. (2019). Video assistant referees (VAR). [online] Available at: <https://football-technology.fifa.com/en/media-tiles/video-assistant-referee-var/> [Accessed 3 Dec. 2019].
- [15] Team, V. (2019). Technology in soccer. [online] Videobserver Blog. Available at: [http://blog.videobserver.com/the-technological-evolution-in-soccer/#targetText=Soccer%20is%20a%20major%20sport,\(heart%2Drate%20monitor\)](http://blog.videobserver.com/the-technological-evolution-in-soccer/#targetText=Soccer%20is%20a%20major%20sport,(heart%2Drate%20monitor)). [Accessed 14 Oct. 2019].
- [16] Olszczyński, A. (2019). The Technology Behind Football. [online] Mako Blog. Available at: <https://makoblog.com/the-technology-behind-football/> [Accessed 14 Oct. 2019].
- [17] axiwi (2019). The referee communication system for soccer. [image] Available at: <https://www.axiwi.com/wireless-referee-communication-system-for-soccer/> [Accessed 4 Dec. 2019].
- [18] Hire Intelligence. (2019). The Evolution of Technology in Sport. [online] Available at: <https://www.hire-intelligence.co.uk/evolution-of-technology-in-sport/> [Accessed 4 Dec. 2019].
- [19] Karr, D. (2019). The Huge Statistics of Sports on Social Media » Martech Zone. [online] Martech Zone. Available at: <https://martech.zone/social-media-sports-industry-statistics/> [Accessed 14 Oct. 2019].
- [20] Coche, R. (2019). Promoting women's soccer through social media: how the US federation used Twitter for the 2011 World Cup. [online] Taylor & Francis. Available at: <https://www.tandfonline.com/doi/full/10.1080/14660970.2014.919279> [Accessed 14 Oct. 2019].
- [21] Williams, J. and Chinn, S.J. (2010), "Meeting relationship-marketing goals through social media: a conceptual model for sport marketers", *International Journal of Sport Communication*, Vol. 3 No. 4, pp. 422-437.
- [22] Parganas, P., Anagnostopoulos, C. and Chadwick, S. (2019). Effects of social media interactions on brand associations | Emerald Insight. [online] Emerald.com. Available at: <https://www.emerald.com/insight/content/doi/10.1108/IJSMS-05-2017-087/full/html> [Accessed 14 Oct. 2019].
- [23] Rookwood, J. and Chan, N. (2011), "The 39th game: fan responses to the Premier League's proposal to globalize the English game", *Soccer & Society*, Vol. 12 No. 6, pp. 897-913.

- [24] Kerr, A.K. and Gladden, J. (2008), "Extending the understanding of professional team brand equity to the global marketplace", *International Journal of Sport Management & Marketing*, Vol. 3 Nos 1/2, pp. 58-77
- [25] Booton, J. (2019). How Soccer Technology Has Evolved Since Brazil's World Cup. [online] Sporttechie.com. Available at: <https://www.sporttechie.com/how-soccer-technology-has-evolved-since-brazils-world-cup/> [Accessed 18 Nov. 2019].
- [26] Matsuoka de Aragão, M. (2015). [online] Scholarworks.wmich.edu. Available at: [https://scholarworks.wmich.edu/cgi/viewcontent.cgi?article=3609&context=honors\\_theses](https://scholarworks.wmich.edu/cgi/viewcontent.cgi?article=3609&context=honors_theses) [Accessed 4 Dec. 2019].
- [27] Ilker Etikan, Sulaiman Abubakar Musa, Rukayya Sunusi Alkassim. Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics*. Vol. 5, No. 1, 2016, pp. 1-4. doi: 10.11648/j.ajtas.20160501.11
- [28] Richelieu, A., Lopez, S. and Desbordes, M. (2008), "The internationalization of a sports team brand: the case of European soccer teams", *International Journal of Sports Marketing & Sponsorship*, Vol. 10 No. 1, pp. 29-44
- [29] 9 football clubs that epitomise shrewd management in the country | Business Financial Times Online | Economy, World, Finances, IT, ICT, Business. (2018). Retrieved 19 April 2020, from <https://thebftonline.com/2018/lifestylesports/9-football-clubs-that-epitomise-shrewd-management-in-the-country/>
- [30] Sackey, R. (2016). FEATURE: Reaping the benefits on social media by Ghanaian clubs. Retrieved 19 April 2020, from <https://ghanasoccernet.com/feature-reaping-the-benefits-on-social-media-by-ghanaian-clubs>
- [31] <http://www.thefa.com/>
- [32] <https://www.premierleague.com/>
- [33] <https://www.ghanafa.org/category/premier-league>.
- [34] Tackie, G. (2018). *Improving the Football Industry in Ghana through Franchising, Licensing and Merchandising: A Focus on Domestic Football Teams*. (1st ed., p. 48). Berekuso.