

Market potential of TikTok in the context of the communication range of soccer players on social networks

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ABSTRACT

The study aims to put the social network TikTok into the context of the marketing attractiveness and potential of soccer players in terms of communication range through social networks. Soccer clubs can assess the expenses of gaining additional followers through a purchased player by an evaluation of the market efficiency of individual soccer players' followers. The study also documents positive effects ensuing from the acquisition of further followers thanks to the purchase of such a player including image, connection with fans, global reach, additional external funds through sponsorship and the sale of television rights, loyal fans and other so-called "extra-football qualities". The study thus brings new perspectives on TikTok, as a network which has so far not been thoroughly researched, in the field of the most popular sport in the world, soccer.

KEYWORDS

TikTok; soccer players; social media; market value; market efficiency; penetration of social network

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INTRODUCTION

TikTok is a social network which is currently experiencing a considerably higher growth in popularity, users and number of downloads than other contemporary social networks, primarily Facebook, Twitter and Instagram (Omnicores.com, 2020; Datareportal: Digital 2020, 2020; Socialbakers.com, 2020; Statista.com, 2020), where purely communication platforms used by these networks, such as WhatsApp and Facebook Messenger, are not taken into consideration. The use of Twitter is, unlike Facebook and Instagram (networks which are the subject of research), vastly different in various countries, as Özsoy (2011) and Yoon, Petrick, & Backman (2017) have shown in studies from Turkey and the USA. Nevertheless, it ranks together with these among the three most used social networks for communicating with sports fans (Mogale, 2020;

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Yoon, Petrick, & Backman, 2017). TikTok currently has around 800 million users (Omnicores.com, 2020; Datareportal: Digital 2020, 2020; Socialbakers.com, 2020; Statista.com, 2020). TikTok has a strong influence on people's behaviour, especially those of a young age (Mogale, 2020), much as has long been the case for other social networks (Shoham et al., 2012). With regard to the expected development on social networks (Omnicores.com, 2020; Datareportal: Digital 2020, 2020; Socialbakers.com, 2020; Statista.com, 2020) it is desirable to include TikTok among relevant social network-based communication channels, both from the perspective of marketing communication in general, and from the perspective of marketing communication of the most widespread and most popular sport in the world, i.e., football/soccer (Müller, Simons, & Weinmann, 2017; WorldAtlas.com, 2020; TotalSportek.com, 2020; BiggestGlobalSports.com, 2020). Soccer players, as the sport's main participants, are thereby provided with another means of communicating directly with their supporters, fans and the public without misrepresentation of information by the mass media (Gibbs, O'Reilly, & Brunette, 2014; Özsoy, 2011; Hambrick, et al., 2010). The study actually focuses on the inclusion of the social network TikTok, as the currently fastest growing form of social media, in the context of marketing attractiveness and potential of soccer players in terms of communication range through social networks.

THEORETICAL BACKGROUND

Today, social networks are an inseparable part of the marketing communication of not only all professional sports teams and clubs (Anagnostopoulos, Parganas, Chadwick, & Fenton, 2018; Watanabe, Yan, & Soebbing, 2016; Vale & Fernandes, 2018; Yoon, Petrick, & Backman, 2017), but also of individual athletes themselves, soccer players in particular (Li & Huang, 2015; Sanderson, 2013; Müller, Simons, & Weinmann, 2017; Pérez, 2013; Gibbs, O'Reilly, & Brunette, 2014; Tiago, et al., 2016). Within the scope of sporting entity marketing communication, social networks can be used for various marketing objectives. Anagnostopoulos, Parganas, Chadwick, & Fenton (2018) point out the effect of Instagram for strengthening the brand performance of soccer clubs in the English Premier League through considerable and increasing fan engagement, and thereby increasing congruence between a soccer club's desired and perceived brand image. As well as brand image, the need for information on the brand, brand empowerment and love for a brand are other driving forces for the use of social networks in sports marketing for building a fan base (Vale & Fernandes, 2018). Information directly from sports brands (clubs, teams and individuals), and the associated increase of credibility, involvement and attractiveness, significantly strengthens fan loyalty to the brand (Yoon, Petrick, & Backman, 2017). The more fans a sporting entity has, the more attractive it will be for obtaining external sources of funding, which are provided by sponsors/business partners, the media through the purchase of broadcasting rights, and other spectators and potential fans (Pieters, Knobens, & Pouwels, 2012). Followers on social networks also act as further opinion leaders and propagators of communications, through their contacts, to other recipients, thus increasing communication ranges through the profiles of athletes in social networks even further (Araujo, 2019). Followers and fans are essentially "co-producers" of a sports product and salient stakeholders in the value co-creation process (Zagnoli & Radicchi, 2010).

Since interaction and communication on social networks is a very dynamic process, sporting entities have to work with these tools both strategically and in view of the overall organisational goals of the team, club or individual (Watanabe, Yan, & Soebbing, 2016). When strategically planning communication on social networks, it is important to pay particular attention to the production of creative content relating to specific events on the particular entity's sporting calendar, and also to pay attention to perspectives and reviews after such events, as these are important factors for the positive development of the number of followers on social networks (Watanabe, Yan, & Soebbing, 2015). Creative content is also important during sporting events themselves, because spectators and fans today often make use of media multitasking while following a sports match or the performance of an athlete (Weimann-Saks, Ariel, & Elishar-Malka, 2020).

The above facts primarily present the positives of communication of sports subjects on social networks, however, Waters et al. (2011) remind us of the limited control over content on the profiles of sports organisations and the insufficient provability of return on investment. They therefore point all the more to the need for administration of profiles on social networks, especially if they have as many followers as soccer clubs and individual soccer players do (Waters et al., 2011).

Social networks in the marketing communication of soccer players

Just like sporting entities in general, individual athletes (for the purpose of this study soccer players) use social networks as a platform for communication, media ownership and content, their own publicity (marketing communication) and their own brand building (Gibbs, O'Reilly, & Brunette, 2014). But they also add a behind-the-scenes look at their professional and personal lives (Gibbs, O'Reilly, & Brunette, 2014; Caslavova & Voracek, 2019; Voracek, 2019). Direct individual communication between players and fans via social networks facilitates a greater connection between fans and the whole team, for which the particular soccer player plays, thereby creating closer and more connected interactive communication between players, fans and teams (Watanabe, Yan, & Soebbing, 2016; Williams & Chinn, 2010; Gibbs, O'Reilly, & Brunette, 2014). Teams which then buy individual players have the opportunity to obtain and expand their own fan base online, representing a significant opportunity for team managers (Vale & Fernandes, 2018). Fans also function as a means of support and defence of athletes and by extension also their teams against unauthorised communication attacks from other parties, whether they are from the media, the general public, or fans of other players and teams (Sanderson, 2013). Mutual interaction and communication is thus referred to as the core of the relationship between fans (followers) and an athlete on social networks (Witkemper, Lim, & Waldburger, 2012).

Fans (followers) on social networks can ultimately have such power that they become part of an athlete's decision-making process regarding which team they should join or play for. This has been shown, for example, in a study of Chris Bosh, a basketball player in the NBA (Sanderson, 2013). Bosh and the agency representing him let his followers on Twitter vote for which team he should move to from the Toronto Raptors for the 2010/2011 season (Sanderson, 2013).

Of course, mutual communicative relationships require the creation of high-quality content, as has already been stated (Watanabe, Yan, & Soebbing, 2015). In sport,

especially for professional sports teams and individuals, particular attention must be paid to the authenticity and scope of engagement, as these are very important aspects for communicating on social networks (Pronschinske, Groza, & Walker, 2012). Immediacy and exclusivity of information and content have also proved to be important factors, particularly, for example, for women's soccer players (Coche, 2014), though this can also apply to men's players. Each social network is suited to a different kind of content or, as the case may be, fans use each of them for a different purpose and need for information, as stated by Lock (2019). Facebook, for example, focuses more on support from fans, Instagram is aimed more at fun, and Twitter is a centre for up-to-date information (Lock, 2019; Gibbs, O'Reilly, & Brunette, 2014). Information and entertainment appear to be important factors for motivating followers on the social network pages of individual athletes (Witkemper, Lim, & Waldburger, 2012).

Social networks and the market value of soccer players

Herm, Callsen-Bracker, & Kreis (2014, p. 484) define the market value of a professional athlete, such as a soccer player, as “an estimate of the amount of money a club would be willing to pay in order to make this athlete sign a contract, independent of an actual transaction.” Therefore, even though the actual final transfer fee may be different (Moreno-Jiménez & Zaragoza, 2011; Herm, Callsen-Bracker, & Kreis, 2014; Müller, Simons, & Weinmann, 2017), market value is a relevant variable for the conducted study, because it remains a basic monetary value for subsequent transfer negotiations for both the selling and buying club (Müller, Simons, & Weinmann, 2017).

Numerous studies and authors have dealt with the influence of various factors on the final market value of soccer players (Majewski, 2016; Kologlu, et al., 2018; Aregall Abadias, 2016; Moreno-Jiménez & Zaragoza, 2011; Müller, Simons, & Weinmann, 2017; Singh & Lamba, 2019; He, Cachucho, & Knobbe, 2015; Bolgova, et al., 2018; Richau, Follert, & Emrich, 2010; Kiefer, 2012; Herm, Callsen-Bracker, & Kreis, 2014; Goff, Kim, & Wilson, 2017; Kanyinda, Bouteiller, & Karyotis, 2012). According to Majewski (2016), the factors that most influence a soccer player's market value are total goals and “assists”, the value of the club that the player plays for, and the player's goodwill and “brand”. Goodwill and brand can be significantly influenced by the activity and communication of players on social networks (Gibbs, O'Reilly, & Brunette, 2014). Aregall Abadias (2016) shows the significant influence of social networks on the market value of soccer players (specifically, a 1% increase in followers on Facebook means an increase in market value of €3,567,000, while a 1% increase in followers on Twitter equals an increase in market value of €3,109,000). Conversely, Moreno-Jiménez & Zaragoza (2011) state that the influence of external relationships (which include fans and the mass media) on market value and on transfer fees is not particularly significant (specifically carrying a weight of 1.3%). Müller, Simons, & Weinmann (2017) also present a summary of the many factors that have an influence on the market value of soccer players, among them internet popularity, which also makes use of social media (specifically Facebook, Reddit and YouTube). Their effect on market value, however, is minimal (Müller, Simons, & Weinmann, 2017). A soccer player's overall popularity, image and brand can also be referred to as “extra-soccer qualities”, which undoubtedly have a major or minor influence on market value (Kanyinda, Bouteiller, & Karyotis, 2012). Bolgova, et al. (2018) even point out the indirect influence of

physical attractiveness on player transfers, and thus on the players' market value. On the other hand, a soccer player's current market value can also manifest itself in his image and his ability to attract crowds, because of his personality and the original and even exotic way in which he dresses or sports more or less fashionable hair styles (Kanyinda, Bouteiller, & Karyotis, 2012). This can then mean additional income for the club generated by merchandising (Kanyinda, Bouteiller, & Karyotis, 2012). Social networks and media in general are suitable tools which both soccer clubs and individual players use to propagate such "extra-soccer qualities", not only on the local but also on the global market (Rowe & Gilmour, 2010; Wagg, 2007; Sondaal, 2013). The number of followers on such social media is considered to be one of the most important KPIs in the soccer industry for social media marketing (Podobnik, 2013).

RESEARCH OBJECTIVES

The main objective of the study is to research the inclusion of the social network TikTok, as the currently fastest growing form of social media, in the context of the marketing attractiveness and potential of soccer players in terms of communication range through social networks.

The TikTok social network currently appeals primarily to the younger generation of soccer fans and recipients of communications from the world's most popular soccer players. It has already taken its place among large social media, which primarily include Facebook, Twitter and Instagram. Today, these social media form a basic communication framework for direct communication between soccer players and their fans from all over the world. The main aim of the work concentrates the following partial research objectives (RO's):

RO1: an analysis of the market efficiency of soccer players from the point of view of the market value of followers for individual players on individual social networks (Facebook, Twitter, Instagram and TikTok)

RO2: an analysis of the market efficiency of soccer players from the point of view of the market value of followers for individual players on the overall communication range of profiles on social networks

RO3: an estimate of the market potential of TikTok in the context of the communication range of soccer players on social networks

METHODS

Participants/Research sample

The basic research sample chosen for the research is the top 100 soccer players according to their current market value (as per the website Transfermarkt.com) as of 18 March 2020. The top 100 soccer players have also been chosen because they have the greatest communication range via social networks and they use (with just a few exceptions) all three of the most widespread networks – Facebook, Twitter and Instagram – at the same time. The research therefore counts a total of 100 observations, or 100 observed subjects ($N = 100$), whose current market value ranges from €200 million (maximal MV – Kylian Mbappé) to €50 million (minimal MV – Nicolò Zaniolo).

Procedure

The first stage of the study consists in monitoring the official profiles of all 100 soccer players on selected social networks – Facebook (FB), Twitter (TW), Instagram (IG) and TikTok (TT). Important figures for the collection of data are the number of followers of each soccer player and the subsequent sum of figures from individual networks as the so-called Social Network Reach (hereinafter referred to as “SN reach”) – all data as of 18 March 2020.

The second stage then calculates the market efficiency of soccer players from the point of view of the market value of followers for individual players on individual social networks (Facebook, Twitter, Instagram and TikTok) and on the total SN reach. This calculation is always performed by computing the ratio between the player’s market value and the number of followers. It is thus possible to obtain an interesting overview of the potential attractiveness and, above all, the potential effectiveness of funds spent on the purchase of a player (here expressed as the market value) for gaining more fans for a soccer club through the social network profiles of soccer players. In addition to the resulting individual values, the values of the basic statistical description for the entire research sample are calculated here (mean, valid mean, median and standard deviation).

The third stage focuses on an estimate of the market potential of TikTok in the context of the communication range of soccer players on social networks. Market potential is estimated on the basis of existing figures of followers and users on social networks in 2020 (specifically from the most up-to-date data from Statista.com and the individual profiles of soccer players as of 18 March 2020). As a benchmark value for the estimate, the study uses the soccer player with the greatest number of followers on Facebook, Twitter and Instagram and who, at the same time, shows the greatest market efficiency from the perspective of the market value of followers. In this case, it is Cristiano Ronaldo (for values see Results). The number of followers that he has achieved are related (by ratio) to the total number of users of individual social networks (Facebook, Twitter and Instagram), the sum of the users of the three mentioned networks (*modified SN reach*) and the total number of unique social network users. The current number of TikTok users is multiplied by the obtained penetration indices (referred to in the study as the *CR indices*). This creates a battery of five numerical (number of followers) estimates, from which the *mean potential* (including the average *CR index*) is then determined. The *CR indices* are also interpreted as the potential penetration of TikTok in the case of the expected and forecasted growth (and thus changes) in the number of users (Omnicores.com, 2020; Datareportal: Digital 2020, 2020; Socialbakers.com, 2020).

RESULTS

(R01, R02) Market efficiency of soccer players in terms of the market value of followers on social networks

The overall main results of the market efficiency of soccer players in terms of market values of followers on social networks are clearly specified and presented in Appendix 1. The overall results are supplemented by Appendix 2, in which a logarithmic scale is again used for the *y-axis* because of the possibility of displaying significantly different values. Market efficiency is only calculated here for the valid research sample for individual social networks, so only valid descriptive statistics are presented.

The overall results indicate the dominance of Instagram (similarly to the number of followers) even in terms of market efficiency of communication on social networks, where the hypothetical costs (for a potential buyer from a club) for gaining another follower are $Valid\ M = €535.73$. The standard deviation for Instagram is also the lowest ($Valid\ SD = €4,722.10$) among the individual networks. Instagram surpasses the other social networks even more noticeably in median value ($Valid\ Med = €26.04$). It can therefore be noted that the hypothetical costs (for a potential buyer from a club) for gaining another follower on Instagram are equal to or lower than €26.04 for 50% of soccer players (from the studied top 100 players according to market value). A significant point of interest is the clear similarity of Instagram results to the efficiency of the overall SN reach ($Valid\ M = €500.07$, $Valid\ SD = €4,526.74$ and $Valid\ Med = €20.35$). From this perspective, Instagram is the most important of all four studied social networks.

Other social networks in terms of the researched and measured efficiency lag behind Instagram and, as a consequence, also the overall SN reach. Facebook lags behind the least ($Valid\ M = €1,469.94$, $Valid\ SD = €5,653.46$ and $Valid\ Med = €154.72$). It is followed by Twitter ($Valid\ M = €28,559.15$, $Valid\ SD = €173,950.53$ and $Valid\ Med = €134.23$), albeit with a lower and therefore more efficient median than Facebook. TikTok so far appears to be a highly inefficient communication network ($Valid\ M = €3,132,639.05$, $Valid\ SD = €6,899,395.12$ and $Valid\ Med = €22,102.94$), however the thus far low use of the network by the top 100 soccer players ($Valid\ N = 25$) must be taken into account.

An interesting comparison is also provided in Appendix 1 when looking at the results of individual players. The current relatively low market value of Cristiano Ronaldo ($MV = €75,000,000$, which is his lowest since 7 January 2010 according to Transfermarkt.com) further increased the market efficiency of the communication range with a *total SN value* of €0.18. In addition to TikTok ($TT\ value = €386.00$), the hypothetical cost (for a potential buyer from a club) for gaining another follower through C. Ronaldo (as the only one of the top 100 surveyed) on all social networks is less than €1.00 ($FB\ value = €0.60$, $TW\ value = €0.90$, and $IG\ value = €0.36$). Cristiano Ronaldo and his attained values (both communication range and market efficiency of communication on social networks) can therefore be seen as a benchmark for a subsequent estimate and calculation of the market potential of TikTok in the context of the communication range of soccer players on social networks.

In contrast, Rodri (Manchester City) has a relatively high market value for his age ($age = 23$, a young player with good prospects) $MV = €80,000,000$ (even higher than C. Ronaldo), but his total SN reach is only 1,757 people (followers on social networks). In terms of communication range on social networks, this means hypothetical costs for Manchester City with a *total SN value* of €45,532.16 per follower. In comparison with the *total SN value* of other soccer players, Rodri is highly inefficient among the research sample, with orders of magnitude worse than other players in the sample (the second worst efficiency is shown by Mikel Oyarzabal of Real Sociedad with a *total SN value* of €748.13). It is important to note, however, that both players (Rodri and Mikel Oyarzabal) only use two of the four social networks for communication, Twitter and Instagram. In the case of Rodri, it is therefore clear that his market value ($MV = €80,000,000$ – currently ranking him as the 32nd best player in terms of market value) reflects entirely different aspects of the player (e.g., performance in the

game) to a much greater extent than marketing and communication attractiveness. Even so, this result can be viewed positively from the perspective of significant future marketing and communication potential, which could be significantly influenced by his currently high market value.

(R03) Estimate of the market potential of TikTok in the context of the communication range of soccer players on social networks

The results of the calculation of an estimate of the market value of TikTok in terms of the communication range of soccer players on social networks is presented in Appendix 3. For comparison, Appendix 3 also presents the current greatest communication range on TikTok from the ranks of soccer players, specifically Mohamed Salah (*TT followers* = 530,700), Alphonso Davies (*TT followers* = 427,200) and Cristiano Ronaldo (*TT followers* = 194,300).

The estimated market potential of number of followers of soccer players on TikTok has multiple variants, depending on which social network or what number of users the estimate is based on. An estimate (index and number of followers) calculated on the basis of Instagram can particularly be considered to produce important and relevant values. Current statistics on TikTok users are very similar to the other studied social networks in terms of age and gender of users (Omnicores.com, 2020; Datareportal: Digital 2020, 2020; Statista.com, 2020). However, the relevance of an estimate based on Instagram is based on the form and style of posts (TikTok – 15s videos, Instagram – Insta Stories short videos), the largest average use of Instagram (and number of followers) for soccer players, and the fact that according to the study Datareportal: Digital 2020 (2020), up to 500 million people watch short videos on Instagram on at least a monthly basis.

The estimated potential number of followers of soccer players on TikTok is therefore 166,400,000, while the average estimate from the studied social networks is 115,796,545 followers. Of course, attaining these values will only be realistic for exceptionally popular soccer players of the future, following the example of contemporary players C. Ronaldo, L. Messi, or Neymar Jr. However, a more important figure than the estimate of the absolute number of followers, which can be found in Appendix 3, is the so-called CR index, which expresses the ratio of the number of followers of C. Ronaldo (the chosen benchmark for estimating potential) to the number of users on the social network. This index is then applicable for the future development (increase/decrease) of the number of users of the selected social networks, including TikTok. An estimate based on Instagram attains a CR index of 0.208 (20.8%). An estimate based on the studied social networks produces an average CR index of 0.14475 (14.475%). For the top 100 soccer players (according to market value), the estimated market potential (number of followers) of TikTok is therefore up to 14.5–21% (115.8–166.4 million in 2020) from the total number of TikTok users (800 million in 2020).

DISCUSSION AND IMPLICATIONS

This study presents the currently fastest growing social network, TikTok (Omnicores.com, 2020; Datareportal: Digital 2020, 2020; Socialbakers.com, 2020; Statista.com, 2020), in the overall context of the communication range of soccer players on social networks. The social networks that form the overall context for this study are Face-

book, Twitter and Instagram, which are currently the most popular and most widely used by athletes (Mogale, 2020; Yoon, Petrick, & Backman, 2017) and especially by soccer players. For this reason, the study does not cover other social media such as YouTube, Reddit and Pinterest, which some athletes and sports clubs also use for their marketing communications. In addition, each social network is suited to and used for different kinds of content (Lock, 2019; Gibbs, O'Reilly, & Brunette, 2014). The soccer players who have been selected for the study are currently in the top 100 by market value according to the Transfermarkt.com website. The use of market values from Transfermarkt.com is justified by the fact that Transfermarkt.com is "*the leading website on the soccer transfer market*" according to Müller, Simons, & Weinmann (2017, p. 612). "*The site offers general soccer-related data, such as scores and results, soccer news, transfer rumours, and estimations of market value at the individual and team levels for most professional soccer leagues.*" The results of the study show that not all soccer players in the top 100 (according to market value) use all three of the currently most widely used social networks. Based on this fact, we have derived so-called *valid* quantities, which only include those players who have their own official profile on a particular social network. For different networks, N therefore varies – for Facebook $N = 96$, for Twitter $N = 94$, and for Instagram $N = 98$. Despite the currently high number of TikTok users, which is around 800 million (Omnicores.com, 2020; Datareportal: Digital 2020, 2020; Socialbakers.com, 2020; Statista.com, 2020), very few players from the research sample have their own official profile, $N = 25$. TikTok is not yet at the centre of attention of soccer players as much as other networks.

One of the significant benefits of the study is an evaluation of the market efficiency of soccer players in terms of the market value of followers on social networks. For each of the top 100 soccer players (according to market value on Transfermarkt.com), the ratio between market value and the number of followers is calculated. This provides soccer clubs with an overview of the attractiveness of a player in terms of communication range, which a potential buying club also pays for (in addition to the player himself and his performance in the game) when purchasing a player. It is therefore another aspect that a player brings to a club. Attractiveness (Kanyinda, Bouteiller, & Karyotis, 2012), image (Anagnostopoulos, Parganas, Chadwick, & Fenton, 2018; Kanyinda, Bouteiller, & Karyotis, 2012), connection with fans (Watanabe, Yan, & Soebbing, 2016; Williams & Chinn, 2010; Gibbs, O'Reilly, & Brunette, 2014), fan base (Vale & Fernandes, 2018), support and defence (Sanderson, 2013), opinion leadership (Araujo, 2019), global reach (Rowe & Gilmour, 2010; Wagg, 2007; Sondaal, 2013), sufficient external sources of funding via sponsoring and sales of television rights (Pieters, Knobens, & Pouwels, 2012), and loyal fans (Yoon, Petrick, & Backman, 2017) are all aspects which create so-called "extra-soccer qualities" (Kanyinda, Bouteiller, & Karyotis, 2012) which a soccer player brings to the club that purchases him for a certain monetary value. This can then mean additional income for the club generated by merchandising (Kanyinda, Bouteiller, & Karyotis, 2012). All of the mentioned "extra-soccer qualities" reflect the communication range (number of followers) of a soccer player on social networks; the higher the number of followers and the lower the market value, the cheaper and more attractive a soccer player is in this regard for a buying club. That is why the ratio between market value and number of followers has been chosen. The purchasing club therefore at least gains a rough idea of the efficiency

of investments, thereby partially reducing the disadvantage mentioned by Waters, et al. (2011) on the insufficient provability of return on investment into communication via social networks. In addition, followers on social networks can have the power to influence the resulting transfer fee through their own opinion on the choice of the club that a player is going to play for, as Sanderson (2013) shows.

A discussion about the choice of the variable “market value” is then well motivated, because in the end market value (on Transfermarkt.com) is not the price a soccer player is actually bought for. It would therefore be more appropriate to choose the transfer fee, as used by Moreno-Jiménez & Zaragoza (2011). As is shown in the theoretical background, however, (Moreno-Jiménez & Zaragoza, 2011; Herm, Callsen-Bracker, & Kreis, 2014; Müller, Simons, & Weinmann, 2017) market value is a basic monetary value for subsequent transfer negotiations. Müller, Simons, & Weinmann (2017, p. 611) also state that “*Market values can be understood as estimates of transfer fees – that is, prices that could be paid for a player on the soccer market – so they play an important role in transfer negotiations.*” In view of the time that this study has been conducted (during the COVID-19 pandemic) and the termination or suspension of soccer competitions, the current market values (listed on Transfermarkt.com) are a more than relevant estimate of players’ current values. That is one reason why they have been used in the study, even though they may ultimately be different to transfer fees, which will only become relevant after the restart of soccer competitions and the transfer market.

In terms of achieved results, Instagram is again the most effective social network for communication, where every follower costs on average *Valid M* = €535.73, which is very similar to the average efficiency of the total SN reach, where *Valid M* = €500.07. Among soccer players, the most efficient is Cristiano Ronaldo with the values *FB value* = €0.60, *TW value* = €0.90, *IG value* = €0.36, *TT value* = €386.00, and *Total SN value* = €0.18. His efficiency and total attained number of followers then represent the chosen benchmark for estimating the market potential of TikTok.

An estimate of the market potential of TikTok in the context of the communication range of soccer players on social networks has been calculated using the currently attained number of followers (of Cristiano Ronaldo) and users of individual networks, as well as the total number of unique users of all social media according to figures from Statista.com (January 2020) – see Appendix 3. The study thus brings another aspect for TikTok in the overall context of social network profiles of soccer players. TikTok (in a similar way to Instagram) has mostly a younger group of users (in terms of age), and it is therefore possible to consider the impact of communication by soccer players on young fans, with whom it is then possible to build a strong relationship and love for a brand, as Vale & Fernandes (2018) say. However, for soccer players and/or their marketing agency or manager representation, an additional social network means more work (Waters, et al., 2011), activities, effort and time (Waters, et al., 2011), because communication should be creative (Watanabe, Yan, & Soebbing, 2015), authentic (Pronschinske, Groza, & Walker, 2012), immediate (Coche, 2014; Witkemper, Lim, & Waldburger, 2012) and with a high quantity of engagement (Pronschinske, Groza, & Walker, 2012). It thereby places demands on systematic and strategic activities regarding the planning and implementation of communication on another social network like TikTok (Watanabe, Yan, & Soebbing, 2016).

TikTok is a network based primarily on sharing original content by way of short videos with a wide range of editing and creative options (TikTok, 2020). For soccer players, such short videos are a very attractive form of communication with fans. Particularly at times of an unexpected large-scale event such as the COVID-19 pandemic (when the study was conducted), TikTok provides a possibility to present creative content from the privacy of the players' own homes, a fact which is supported by the authors Watanabe, Yan, & Soebbing (2015), Gibbs, O'Reilly, & Brunette (2014), Čáslavová & Voráček (2019) and Voráček (2019). Short videos are also suitable for authenticity and a high level of engagement (Pronschinske, Groza, & Walker, 2012). The ease and speed with which videos can be edited meets the requirement for immediacy, exclusivity and rapidity of the content of communications (Coche, 2014; Witkemper, Lim, & Waldburger, 2012).

Given the characteristics of TikTok, the study uses Cristiano Ronaldo (as a benchmark) and Instagram for the resulting relevant estimate of the market potential of soccer players' communication range. Instagram is indeed the most widely used network by soccer players, as the results of this study show. In addition, its content is particularly oriented towards entertainment (Lock, 2019; Gibbs, O'Reilly, & Brunette, 2014), which proves to be an especially important factor for motivating followers on the social network profiles of individual athletes (Witkemper, Lim, & Waldburger, 2012). The resulting relevant estimate of TikTok's market potential in the context of the communication range of soccer players on social networks is up to 14.5–21% of followers (115.8–166.4 million in 2020) from the total number of TikTok users (800 million in 2020). At present, the penetration of soccer players with the largest number of followers on TikTok is only 0.066% (530,700 followers) of the total number of users (800 million). There is therefore a great, as yet unfulfilled and unused future potential for the growth of communication on this social network.

Limitations and future research

The presented study naturally has certain restrictions and limitations. One of the most important restrictions is the already mentioned use of market values in spite of the fact that the resulting value at which a soccer player is traded between teams is different and depends on individual negotiations of the soccer clubs involved (Moreno-Jiménez & Zaragoza, 2011; Herm, Callsen-Bracker, & Kreis, 2014; Müller, Simons, & Weinmann, 2017). The study is then further limited to the use of Facebook, Twitter and Instagram, although both soccer clubs and players themselves use other social media, such as YouTube, Reddit and Pinterest. However, these other networks are not as widespread and widely used as Facebook, Twitter and Instagram (Statista.com, 2020). The study includes only the top 100 soccer players according to their current market value (on Transfermarkt.com), which excludes even players of such popularity (in terms of communication range and brand image or brand awareness) as Daniel Carvajal, Isco, Jordi Alba, David de Gea, Georginio Wijnaldum, Mateo Kovačić, Karim Benzema, Gareth Bale, Luis Suárez, and others. The last limitation is the performance of static analyses that do not reflect the dynamic development over time in recent years. If this was taken into account, an even more sophisticated and accurate estimate of the market potential of TikTok could be made.

The above-mentioned limitations are an opportunity for further future research dealing with the market efficiency of social networks not only of soccer players, but

also of individual athletes in other sports branches or entire sports clubs. That being said, the social network TikTok as a whole provides a primary stimulus for future research. Not only is it the currently fastest growing social network in terms of user numbers (Omnicores.com, 2020; Datareportal: Digital 2020, 2020; Socialbakers.com, 2020; Statista.com, 2020), but it is also a thus far rather unexplored network in sport and in many other possible areas in general.

CONCLUSION

The study puts the TikTok social network, as the currently fastest growing form of social media, into the context of marketing attractiveness and potential of soccer players in terms of communication range through social networks. According to the ascertained results, TikTok is currently a minimally used social network among soccer players. The largest number of followers is only 530,700 (Mohamed Salah), while on Facebook it is 126,023,622 (Cristiano Ronaldo), on Twitter 83,100,000 (also C. Ronaldo), and on Instagram 208,000,000 (again C. Ronaldo). On the other hand, there is all the more space for producing something new, attractive and creative, and for taking advantage of potential such as that offered by TikTok. All of this is demonstrated by the ascertained market efficiency values of followers of individual players. The conclusion is a final estimate of the market potential of TikTok in the context of the communication range of soccer players on social networks. According to the method used to calculate this estimate, followers range from 14.5–21% (115.8–166.4 million in 2020) of the total number of TikTok users.

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APPENDIX 1

Descriptive statistics of market efficiency in terms of the market value of followers on social networks

	Market value	FB value	TW value	IG value	TT value	Total SN value
<i>Valid N</i>	100	96	94	98	25	100
<i>Valid M</i>	79 550 000 €	1 469.94 €	28 559.15 €	535.73 €	3 132 639.05 €	500.07 €
<i>Valid SD</i>	28 223 173.1 €	5 653.46 €	173 950.53 €	4 722.10 €	6 899 395.12 €	4 526.74 €
<i>Valid Med (Q2)</i>	70 000 000 €	154.72 €	134.23 €	26.04 €	22 102.94 €	20.35 €
<i>Top 3</i>	Kylian Mbappé	Cristiano Ronaldo	Cristiano Ronaldo	Cristiano Ronaldo	Alphonso Davies	Cristiano Ronaldo
	Raheem Sterling	Lionel Messi	Neymar	Lionel Messi	Mohamed Salah	Lionel Messi
	Neymar	Neymar	Sergio Agüero	Paulo Dybala	Cristiano Ronaldo	Toni Kroos
<i>Valid Bottom 3 (without non-profile soccer players)</i>	Rodrygo	Alphonso Davies	Joshua Kimmich	Ferran Torres	Thibaut Courtois	Ferran Torres
	Ferran Torres	Ferran Torres	Jan Oblak	Mikel Oyarzabal	Roberto Firmino	Mikel Oyarzabal
	Nicolo Zaniolo	Erling Haaland	Rodri	Rodri	Lautaro Martínez	Rodri

Note: N = number of soccer players; M = mean; SD = standard deviation; Med (Q2) = median; second quartile; Valid = without non-profile soccer players.

APPENDIX 2

Descriptive statistics of market efficiency in terms of the market value of followers on social networks

Market value rank	Player	Market value	Age	Club	FB followers	FB value
1	Kylian Mbappé	200 000 000 €	21	Paris Saint-Germain	2 526 784	79,15 €
2	Raheem Sterling	160 000 000 €	25	Manchester City	2 318 995	69,00 €
3	Neymar	160 000 000 €	28	Paris Saint-Germain	59 364 955	2,70 €
4	Sadio Mané	150 000 000 €	27	Liverpool FC	1 256 243	119,40 €
5	Mohamed Salah	150 000 000 €	27	Liverpool FC	12 651 322	11,86 €
6	Harry Kane	150 000 000 €	26	Tottenham Hotspur	1 958 259	76,60 €
7	Kevin De Bruyne	150 000 000 €	28	Manchester City	3 475 017	43,17 €
8	Lionel Messi	140 000 000 €	32	FC Barcelona	93 675 335	1,49 €
9	Jadon Sancho	130 000 000 €	19	Borussia Dortmund	85 329	1 523,51 €
10	Antoine Griezmann	120 000 000 €	28	FC Barcelona	10 821 929	11,09 €
11	Trent Alexander-Arnold	110 000 000 €	21	Liverpool FC	341 575	322,04 €
12	Bernardo Silva	100 000 000 €	25	Manchester City	363 666	274,98 €
13	N'Golo Kanté	100 000 000 €	28	Chelsea FC	1 130 926	88,42 €
14	Leroy Sané	100 000 000 €	24	Manchester City	720 381	138,82 €
15	Virgil van Dijk	100 000 000 €	28	Liverpool FC	453 479	220,52 €
16	Paul Pogba	100 000 000 €	27	Manchester United	10 318 977	9,69 €
17	Jan Oblak	100 000 000 €	27	Atlético Madrid	52 496	1 904,91 €
18	Eden Hazard	100 000 000 €	29	Real Madrid	10 023 105	9,98 €
19	João Félix	90 000 000 €	20	Atlético Madrid	146 538	614,18 €
20	Frenkie de Jong	90 000 000 €	22	FC Barcelona	278 165	323,55 €
21	Kai Havertz	90 000 000 €	20	Bayer 04 Leverkusen	43 294	2 078,81 €
22	Paulo Dybala	90 000 000 €	26	Juventus FC	7 652 069	11,76 €
23	Serge Gnabry	90 000 000 €	24	Bayern Munich	580 578	155,02 €
24	Saúl Ñíguez	90 000 000 €	25	Atlético Madrid	480 178	187,43 €
25	Roberto Firmino	90 000 000 €	28	Liverpool FC	1 240 474	72,55 €
26	Alisson	90 000 000 €	27	Liverpool FC	1 541 706	58,38 €
27	Marc-André ter Stegen	90 000 000 €	27	FC Barcelona	3 240 389	27,77 €
28	Romelu Lukaku	85 000 000 €	26	Inter Milan	2 934 461	28,97 €
29	Christian Eriksen	85 000 000 €	28	Inter Milan	145 271	585,11 €
30	Erling Haaland	80 000 000 €	19	Borussia Dortmund	1 553	51 513,20 €
31	Lautaro Martínez	80 000 000 €	22	Inter Milan	123 466	647,95 €
32	Rodri	80 000 000 €	23	Manchester City	0	
33	Sergej Milinkovic-Savic	80 000 000 €	25	SS Lazio	32 654	2 449,93 €

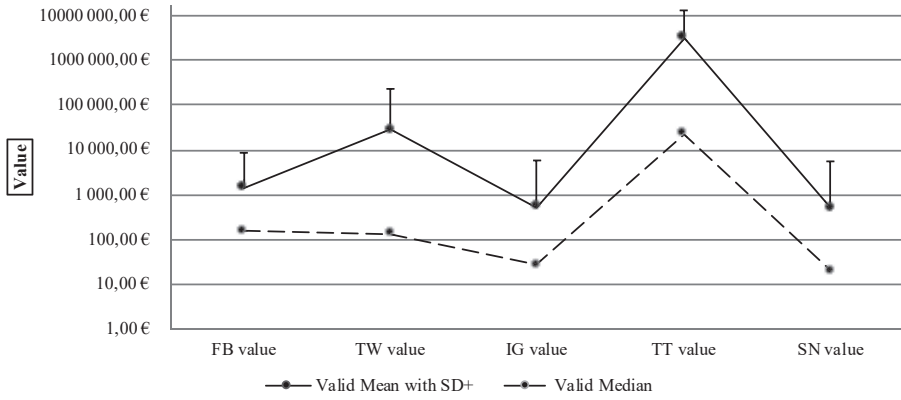
TW followers	TW value	IG followers	IG value	TikTok followers	TT value	SN Reach	SN value
3 900 000	51,28 €	39 600 000	5,05 €	28 500	7 017,54 €	46 055 284	4,34 €
2 300 000	69,57 €	6 800 000	23,53 €	0		11 418 995	14,01 €
45 700 000	3,50 €	2 000 000	80,00 €	57 900	2 763,39 €	107 122 855	1,49 €
22 700	6 607,93 €	6 900 000	21,74 €	0		8 178 943	18,34 €
11 500 000	13,04 €	37 300 000	4,02 €	530 700	282,65 €	61 982 022	2,42 €
2 800 000	53,57 €	9 500 000	15,79 €	0		14 258 259	10,52 €
2 100 000	71,43 €	10 400 000	14,42 €	33	4 545 454,55 €	15 975 050	9,39 €
2 900 000	48,28 €	145 000 000	0,97 €	18 500	7 567,57 €	241 593 835	0,58 €
266 300	488,17 €	3 600 000	36,11 €	1 868	69 593,15 €	3 953 497	32,88 €
6 800 000	17,65 €	30 000 000	4,00 €	4 576	26 223,78 €	47 626 505	2,52 €
1 100 000	100,00 €	3 900 000	28,21 €	0		5 341 575	20,59 €
755 900	132,29 €	2 000 000	50,00 €	0		3 119 566	32,06 €
891 100	112,22 €	6 700 000	14,93 €	0		8 722 026	11,47 €
1 500 000	66,67 €	4 900 000	20,41 €	176	568 181,82 €	7 120 557	14,04 €
1 600 000	62,50 €	8 900 000	11,24 €	0		10 953 479	9,13 €
7 300 000	13,70 €	39 800 000	2,51 €	1 617	61 842,92 €	57 420 594	1,74 €
108	925 925,93 €	1 200 000	83,33 €	0		1 252 604	79,83 €
6 700 000	14,93 €	26 800 000	3,73 €	5 687	17 583,96 €	43 528 792	2,30 €
159 600	563,91 €	2 900 000	31,03 €	22 300	4 035,87 €	3 228 438	27,88 €
456 800	197,02 €	6 500 000	13,85 €	3 201	28 116,21 €	7 238 166	12,43 €
43 600	2 064,22 €	633 000	142,18 €	0		719 894	125,02 €
1 900 000	47,37 €	36 700 000	2,45 €	15 400	5 844,16 €	46 267 469	1,95 €
595 500	151,13 €	1 500 000	60,00 €	0		2 676 078	33,63 €
426 200	211,17 €	1 200 000	75,00 €	0		2 106 378	42,73 €
1 626	55 350,55 €	12 900 000	6,98 €	4	22 500 000,00 €	14 142 104	6,36 €
928 000	96,98 €	6 600 000	13,64 €	0		9 069 706	9,92 €
1 800 000	50,00 €	10 900 000	8,26 €	48 200	1 867,22 €	15 988 589	5,63 €
1 900 000	44,74 €	5 900 000	14,41 €	37 200	2 284,95 €	10 771 661	7,89 €
729 600	116,50 €	2 000 000	42,50 €	0		2 874 871	29,57 €
221 700	360,85 €	3 500 000	22,86 €	0		3 723 253	21,49 €
0		2 800 000	28,57 €	3	26 666 666,67 €	2 923 469	27,36 €
56	1 428 571,43 €	1 701	47 031,16 €	0		1 757	45 532,16 €
1 279	62 548,87 €	470 000	170,21 €	0		503 933	158,75 €

Market value rank	Player	Market value	Age	Club	FB followers	FB value
34	Marcus Rashford	80 000 000 €	22	Manchester United	3 254 096	24,58 €
35	Andrew Robertson	80 000 000 €	26	Liverpool FC	235 387	339,87 €
36	Dele Alli	80 000 000 €	23	Tottenham Hotspur	681 573	117,38 €
37	Timo Werner	80 000 000 €	24	RB Leipzig	157 963	506,45 €
38	Raphaël Varane	80 000 000 €	26	Real Madrid	8 451 352	9,47 €
39	Joshua Kimmich	80 000 000 €	25	Bayern Munich	549 655	145,55 €
40	Heung-min Son	80 000 000 €	27	Tottenham Hotspur	1 085 823	73,68 €
41	Casemiro	80 000 000 €	28	Real Madrid	6 249 420	12,80 €
42	Matthijs de Ligt	75 000 000 €	20	Juventus FC	213 269	351,67 €
43	Aymeric Laporte	75 000 000 €	25	Manchester City	163 013	460,09 €
44	Marco Verratti	75 000 000 €	27	Paris Saint-Germain	2 088 835	35,91 €
45	Mauro Icardi	75 000 000 €	27	Paris Saint-Germain	617 614	121,44 €
46	Cristiano Ronaldo	75 000 000 €	35	Juventus FC	126 023 622	0,60 €
47	Gabriel Jesus	70 000 000 €	22	Manchester City	2 835 225	24,69 €
48	Arthur	70 000 000 €	23	FC Barcelona	1 682 361	41,61 €
49	Ousmane Dembélé	70 000 000 €	22	FC Barcelona	517 859	135,17 €
50	Lucas Hernández	70 000 000 €	24	Bayern Munich	92 313	758,29 €
51	José Giménez	70 000 000 €	25	Atlético Madrid	310 400	225,52 €
52	Ederson	70 000 000 €	26	Manchester City	328 893	212,84 €
53	Fabinho	70 000 000 €	26	Liverpool FC	184 523	379,36 €
54	Harry Maguire	70 000 000 €	27	Manchester United	307 207	227,86 €
55	Kalidou Koulibaly	70 000 000 €	28	SSC Napoli	192 073	364,44 €
56	Phillipe Coutinho	70 000 000 €	27	Bayern Munich	2 515 546	27,83 €
57	Pierre-Emerick Aubameyang	70 000 000 €	30	Arsenal FC	993 716	70,44 €
58	Robert Lewandowski	70 000 000 €	31	Bayern Munich	9 034 468	7,75 €
59	Tanguy Ndombélé	65 000 000 €	23	Tottenham Hotspur	33 516	1 939,37 €
60	Richarlison	65 000 000 €	22	Everton FC	106 841	608,38 €
61	Nicolas Pépé	65 000 000 €	24	Arsenal FC	28 764	2 259,77 €
62	Marquinhos	65 000 000 €	25	Paris Saint-Germain	774 286	83,95 €
63	Jorginho	65 000 000 €	28	Chelsea FC	30 209	2 151,68 €
64	David Alaba	65 000 000 €	27	Bayern Munich	4 460 805	14,57 €
65	Miralem Pjanic	65 000 000 €	29	Juventus FC	999 625	65,02 €
66	Sergio Agüero	65 000 000 €	31	Manchester City	10 803 257	6,02 €
67	Achraf Hakimi	60 000 000 €	21	Borussia Dortmund	388 567	154,41 €
68	Federico Valverde	60 000 000 €	21	Real Madrid	216 888	276,64 €
69	Mikel Oyarzabal	60 000 000 €	22	Real Sociedad	0	
70	Fabián Ruiz	60 000 000 €	23	SSC Napoli	0	

TW followers	TW value	IG followers	IG value	TikTok followers	TT value	SN Reach	SN value
2 400 000	33,33 €	8 100 000	9,88 €	0		13 754 096	5,82 €
1 100 000	72,73 €	2 400 000	33,33 €	0		3 735 387	21,42 €
937 000	85,38 €	0		18	4 444 444,44 €	1 618 591	49,43 €
24 900	3 212,85 €	716 000	111,73 €	0		898 863	89,00 €
5 800 000	13,79 €	14 000 000	5,71 €	0		28 251 352	2,83 €
657	121 765,60 €	2 600 000	30,77 €	0		3 150 312	25,39 €
16 400	4 878,05 €	3 900 000	20,51 €	0		5 002 223	15,99 €
1 900 000	42,11 €	11 900 000	6,72 €	0		20 049 420	3,99 €
48 300	1 552,80 €	4 900 000	15,31 €	0		5 161 569	14,53 €
240 900	311,33 €	783 000	95,79 €	0		1 186 913	63,19 €
286 000	262,24 €	4 700 000	15,96 €	0		7 074 835	10,60 €
1 300 000	57,69 €	6 400 000	11,72 €	0		8 317 614	9,02 €
83 100 000	0,90 €	208 000 000	0,36 €	194 300	386,00 €	417 317 922	0,18 €
1 000 000	70,00 €	14 300 000	4,90 €	0		18 135 225	3,86 €
582 800	120,11 €	4 400 000	15,91 €	0		6 665 161	10,50 €
912 200	76,74 €	8 300 000	8,43 €	0		9 730 059	7,19 €
293 300	238,66 €	1 400 000	50,00 €	0		1 785 613	39,20 €
514 100	136,16 €	991 000	70,64 €	0		1 815 500	38,56 €
220 200	317,89 €	1 800 000	38,89 €	0		2 349 093	29,80 €
635 200	110,20 €	1 700 000	41,18 €	0		2 519 723	27,78 €
742 200	94,31 €	1 700 000	41,18 €	0		2 749 407	25,46 €
285 000	245,61 €	1 400 000	50,00 €	0		1 877 073	37,29 €
2 000 000	35,00 €	22 200 000	3,15 €	0		26 715 546	2,62 €
1 400 000	50,00 €	9 300 000	7,53 €	0		11 693 716	5,99 €
1 200 000	58,33 €	16 700 000	4,19 €	3 167	22 102,94 €	26 937 635	2,60 €
39 100	1 662,40 €	442 000	147,06 €	0		514 616	126,31 €
224 300	289,79 €	2 400 000	27,08 €	0		2 731 141	23,80 €
0		940 000	69,15 €	0		968 764	67,10 €
367 300	176,97 €	3 100 000	20,97 €	0		4 241 586	15,32 €
0		1 200 000	54,17 €	0		1 230 209	52,84 €
1 800 000	36,11 €	4 800 000	13,54 €	0		11 060 805	5,88 €
502 500	129,35 €	4 900 000	13,27 €	0		6 402 125	10,15 €
13 400 000	4,85 €	12 700 000	5,12 €	0		36 903 257	1,76 €
362 200	165,65 €	2 700 000	22,22 €	0		3 450 767	17,39 €
365 800	164,02 €	2 400 000	25,00 €	0		2 982 688	20,12 €
16 000	3 750,00 €	64 200	934,58 €	0		80 200	748,13 €
74 700	803,21 €	416 000	144,23 €	0		490 700	122,27 €

Market value rank	Player	Market value	Age	Club	FB followers	FB value
71	Davinson Sánchez	60 000 000 €	23	Tottenham Hotspur	47 248	1 269,90 €
72	Federico Chiesa	60 000 000 €	22	ACF Fiorentina	29 536	2 031,42 €
73	Christian Pulisic	60 000 000 €	21	Chelsea FC	307 946	194,84 €
74	James Maddison	60 000 000 €	23	Leicester City	16 678	3 597,55 €
75	Bruno Fernandes	60 000 000 €	25	Manchester United	274 991	218,19 €
76	Milan Skriniar	60 000 000 €	25	Inter Milan	52 096	1 151,72 €
77	Clément Lenglet	60 000 000 €	24	FC Barcelona	127 360	471,11 €
78	Anthony Martial	60 000 000 €	24	Manchester United	1 263 300	47,49 €
79	Riyad Mahrez	60 000 000 €	29	Manchester City	2 100 000	28,57 €
80	Niklas Süle	60 000 000 €	24	Bayern Munich	8 817	6 805,04 €
81	Marcelo Brozovic	60 000 000 €	27	Inter Milan	57 325	1 046,66 €
82	Lorenzo Insigne	60 000 000 €	28	SSC Napoli	329 698	181,98 €
83	Stefan de Vrij	60 000 000 €	28	Inter Milan	239 325	250,71 €
84	Thibaut Courtois	60 000 000 €	27	Real Madrid	5 275 691	11,37 €
85	Alexandre Lacazette	60 000 000 €	28	Arsenal FC	552 123	108,67 €
86	Koke	60 000 000 €	28	Atlético Madrid	1 262 457	47,53 €
87	Thiago	60 000 000 €	28	Bayern Munich	3 360 310	17,86 €
88	Toni Kroos	60 000 000 €	30	Real Madrid	12 301 800	4,88 €
89	Houssem Aouar	55 000 000 €	21	Olympique Lyon	49 397	1 113,43 €
90	Declan Rice	55 000 000 €	21	West Ham United	0	
91	Gianluigi Donnarumma	55 000 000 €	21	AC Milan	15 243	3 608,21 €
92	Donny van de Beek	55 000 000 €	22	Ajax Amsterdam	69 837	787,55 €
93	Youri Tielemans	55 000 000 €	22	Leicester City	115 267	477,15 €
94	Memphis Depay	55 000 000 €	26	Olympique Lyon	2 864 782	19,20 €
95	Wilfried Zaha	55 000 000 €	27	Crystal Palace	430 779	127,68 €
96	Luis Alberto	55 000 000 €	27	SS Lazio	7 354	7 478,92 €
97	Alphonso Davies	50 000 000 €	19	Bayern Munich	5 734	8 719,92 €
98	Rodrygo	50 000 000 €	19	Real Madrid	1 977 454	25,29 €
99	Ferran Torres	50 000 000 €	20	Valencia CF	2 814	17 768,30 €
100	Nicolò Zaniolo	50 000 000 €	20	AS Roma	6 574	7 605,72 €
	Mean	79 550 000 €			4 497 404,69	1 469,94 €
	Valid Mean with SD+	79 550 000 €			4 684 796,55	1 469,94 €
	Valid Median	70 000 000 €			409 673,00	154,72 €
	Valid Standard deviation	28 223 173,10 €			16 847 980,19	5 653,46 €
	Valid Standard deviation +	107 773 173,10 €				7 123,40 €
	Valid Standard deviation -	51 326 826,90 €				-4 183,53 €

TW followers	TW value	IG followers	IG value	TikTok followers	TT value	SN Reach	SN value
151 700	395,52 €	601 000	99,83 €	0		799 948	75,00 €
4 214	14 238,25 €	340 000	176,47 €	0		373 750	160,54 €
382 300	156,94 €	2 400 000	25,00 €	14 800	4 054,05 €	3 105 046	19,32 €
209 600	286,26 €	709 000	84,63 €	0		935 278	64,15 €
377 000	159,15 €	1 700 000	35,29 €	0		2 351 991	25,51 €
0		707 000	84,87 €	0		759 096	79,04 €
166 000	361,45 €	1 600 000	37,50 €	0		1 893 360	31,69 €
2 000 000	30,00 €	5 600 000	10,71 €	0		8 863 300	6,77 €
2 100 000	28,57 €	5 000 000	12,00 €	0		9 200 000	6,52 €
2 414	24 855,01 €	618 000	97,09 €	0		629 231	95,35 €
5 978	10 036,80 €	867 000	69,20 €	0		930 303	64,50 €
52 900	1 134,22 €	1 200 000	50,00 €	0		1 582 598	37,91 €
184 500	325,20 €	552 000	108,70 €	0		975 825	61,49 €
2 400 000	25,00 €	6 500 000	9,23 €	5	12 000 000,00 €	14 175 696	4,23 €
1 300 000	46,15 €	3 100 000	19,35 €	32	1 875 000,00 €	4 952 155	12,12 €
954 900	62,83 €	2 100 000	28,57 €	0		4 317 357	13,90 €
3 200 000	18,75 €	4 900 000	12,24 €	0		11 460 310	5,24 €
8 000 000	7,50 €	23 700 000	2,53 €	11	5 454 545,45 €	44 001 811	1,36 €
75 500	728,48 €	335 000	164,18 €	0		459 897	119,59 €
84 600	650,12 €	229 000	240,17 €	0		313 600	175,38 €
141 200	389,52 €	1 700 000	32,35 €	0		1 856 443	29,63 €
34 400	1 598,84 €	1 000 000	55,00 €	0		1 104 237	49,81 €
0		286 000	192,31 €	0		401 267	137,07 €
1 400 000	39,29 €	9 200 000	5,98 €	0		13 464 782	4,08 €
884 400	62,19 €	999 000	55,06 €	0		2 314 179	23,77 €
262 100	209,84 €	0		0		269 454	204,12 €
49 200	1 016,26 €	632 000	79,11 €	427 200	117,04 €	1 114 134	44,88 €
352 200	141,96 €	2 700 000	18,52 €	0		5 029 654	9,94 €
21 700	2 304,15 €	129 000	387,60 €	0		153 514	325,70 €
0		907 000	55,13 €	0		913 574	54,73 €
2 561 879,32	28 559,15 €	9 487 679,01	535,73 €	14 153,98	3 132 639,05 €	16 561 117,00	500,07 €
2 725 403,53	28 559,15 €	9 681 305,11	535,73 €	56 615,92	3 132 639,05 €	16 561 117,00	500,07 €
441 500,00	134,23 €	2 700 000,00	26,04 €	0,00	22 102,94 €	3 729 320,00	20,35 €
9 768 434,23	173 950,53 €	26 004 044,99	4 722,10 €	131 302,39	6 899 395,12 €	49 173 993,99	4 526,74 €
	202 509,68 €		5 257,84 €		10 032 034,17 €		5 026,81 €
	-145 391,38 €		-4 186,37 €		-3 766 756,06 €		-4 026,66 €



APPENDIX 3

Estimates of the Potencial TikTok followers for soccer players

2020	Cristiano Ronaldo followers	Users	CR index	Potential TikTok followers for soccer players
Facebook	126 023 622	2 449 000 000*	0.05146	41 167 373
Twitter	83 100 000	340 000 000*	0.24441	195 529 412
Instagram	208 000 000	1 000 000 000*	0.20800	166 400 000
Modified SN reach	417 123 622	3 789 000 000	0.11009	88 070 440
Unique social media users		3 800 000 000*	0.10977	87 815 499
Mean potential			0.14475	115 796 545
TikTok users		800 000 000*		
Mohamed Salah TT followers		530 700	0.00066	
Alphonso Davies TT followers		427 200	0.00053	
Cristiano Ronaldo TT followers		194 300	0.00024	

Note: * – Statista.com (January 2020); *CR index* = Cristiano Ronaldo followers/Users.