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Awards are career catalysts for young talents in highly competitive job markets

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Abstract

Despite the potential importance of awards as a possible career catalyst, the theoretical and empirical research on awards is still in its infancy. Here, we address this notable shortcoming in the economic literature by exploring data from German youth football. Analyzing whether an early career award, the so-called Fritz Walter Medal, significantly affects the awardee's career trajectory in a highly competitive environment, where performance differences are often hardly perceivable, we find that receiving an early career award seems, per se, to be a robust positive signal for a player's future career success. Intriguingly, though, both the award characteristics, that is, whether it is bestowed in gold, silver, or bronze, and also the exact age at which the awardee receives the bestowal only add limited explanatory power.

Running head: Awards as career catalysts

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Introduction

On the job market, where individuals must convince another party of their quality, holding an award, i.e., a public signal of recognition, can reduce the apparent information asymmetry (e.g., Gallus and Frey, 2016). In particular, in highly competitive job markets such as academia, banking, and consultancy, where many individuals compete for only a few top positions (Nippa and Ehrhardt, 2003), job market candidates may benefit from having received an award, perhaps best understood as a lighthouse of quality (Surlmont and Johnson, 2005), as it emits a strong signal about the recipient's general abilities and skills, as well as hidden characteristics such as character, dedication, or professionalism (e.g., Frey and Neckermann, 2010).¹ This is important because performance differences and the hidden characteristics between individuals competing in these job markets are often minimal, and are sometimes not even measurable by judges (e.g., recruiters). Therefore, it is not surprising that individuals often refer to received awards as succinct resumes of quality and excellence (Gemser et al., 2009) in their CVs, as well as on career networks such as LinkedIn, to distinguish themselves from the competition (Harrison and Jepsen, 2015; Dato et al., 2020).

In particular, for job market candidates at the very beginning of a high-profile career trajectory, reducing information asymmetries is of utmost importance because their future potential employers cannot refer to a proven track record. However, at this early career stage, a third-party's decision about whether to make the hire can have a profound long-term impact

¹ Documenting a form of recognition through an award is not only evident in job markets, where awards are well-known to send a signal about a particular ranking hierarchy (e.g., Chief Executive Officer) or about an outstanding achievement (e.g., Employee of the Month) or performance (e.g., Salesman of the Year). In contrast, as Frey (2019) summarized, today it is difficult to name a social sphere where such awards do not exist.

on the candidate's career path. In this context, emitting a strong signal of quality to future employers is vital for younger non-executives (Waldman, 1984; Dato et. al, 2020) to increase the probability of being recognized for excellence rather than being dropped from the career/promotion tournament early. In contrast, to an informed human resources decision-maker, an award representing a form of excellence might be an early harbinger of the talent's future success (e.g., Ravago et al., 2020), thus reducing the probability of a failed investment (c.f., Spence, 1978) for the potential future employer.

Somewhat surprisingly, i.e., despite the assumed importance of awards as both a possible career starter and, somewhat later, as a catalyst, the theoretical and empirical research on awards is, however, still in its infancy (c.f., Frey, 2019; Harrison and Jepsen, 2015; Gallus and Frey, 2017). For instance, previous empirical research on the antecedents and descendants of awards has primarily focused on exploring an awardee's potential post-award performance changes, using motivational theories to explain potential performance effects (e.g., Ginsburgh, 2003; Larkin et al., 2012; Gubler et al., 2014; Neckermann and Frey, 2014; Gallus, 2015; Ashraf et al., 2014; Kovács and Sharkey, 2014). However, the awards previously explored were mostly internally granted – for example, by a manager to his/her employee – and subsequent short term performance effects were analyzed with respect to the recipient. In addition, the awardees in previous studies are already on well-advanced career paths, winning lifetime achievement awards such as “Chief Executive Officer (CEO) of the year” (Malmendier and Tate, 2009), the “John Bates Clark Medal” (Chan et al., 2014) or the “Nobel Prize” (Chan et al., 2014). In contrast, as of yet, the literature has largely refrained from exploring the possible impact of awards on the awardee's early career trajectory, perhaps because data capturing such early career transition is typically hard to obtain, sometimes even nonexistent.²

² As such, Harrison and Jepsen (2015), to the best of our knowledge, the only other authors who have applied career and signaling theory to analyze the potential effects of winning an externally granted awards on an awardee's career trajectory previously, have been limited to explore qualitative data generated through only a few personal interviews. Intriguingly, the authors, exploring the awardee perspective, find that awardees confirmed the

In this manuscript, we address this notable shortcoming. More precisely, exploring data from German youth football,³ we analyze whether an early career award significantly affects the awardee's career trajectory. In this environment, award winners, all highly motivated young football players at the beginning of their career in a highly competitive environment where performance differences are hardly perceivable, send a strong quality signal to their relevant judges. Consequently, we observe that receiving an early career award seems, per se, to be a robust positive signal for a player's future career success. Intriguingly, however, both the award characteristics – that is, whether it is bestowed in gold, in silver, or in bronze – and also the exact age at which the awardee receives the bestowal only add limited explanatory power.

Awards as signals of quality

In competitive job markets, individuals can communicate positive information about their unobservable qualities to the outside environment via signals. Note that sending such signals is different from sending indices, sometimes referred to as signs (e.g., Gambetta, 2009), which by definition are the fixed attributes of job applicants (e.g., gender, height, and race; c.f., Spence, 1973).⁴ Intriguingly, in the management literature in particular, there is already an extensive body of research exploring the potential effects of a diverse range of signals such as education (e.g., Spence, 2002), experience (e.g., Ko and McKelvie, 2018), and networks (e.g., Shane and

award's signaling effect but also that the self-observed impact on the individual's career as proxied by, for instance, a rise in salary, was negligible.

³ The use of data from professional sports as a lab for analyzing research questions where industry data is typically scarce has a long history in both economics and management research, primarily with regards to a better understanding of labor markets (e.g., Bar-Eli et al., 2020; Day et al., 2012; Kahn, 2000). For instance, Deutscher et al. (2020) use data from professional football to explore the role of a talent's firm choice and subsequent career success. Other authors have employed sports data to explore the antecedents and descendants of phenomena such as career choices (e.g., Schmidt et al., 2017), discrimination (e.g., Szymanski, 2000), promotion decisions (e.g., Kassis et al. 2017), organizational identification (e.g., Bergmann et al., 2016), and social pressure (e.g., Bryson et al., 2021; Reade et al., 2020; Sutter and Kocher, 2004) in the workplace. There also exists a growing literature on potential superstar effects that makes use of sports data (e.g., Hausman and Leonard, 1997; Hoegel et al, 2014; Lucifora and Simmons, 2003).

⁴ Gambetta and his co-authors (Bacharach and Gambetta 2001; Gambetta, 2009; Gambetta and Przepiorka, 2014) developed the conceptual distinction between signals and signs over time. According to Gambetta (2009), signals are an actors' actions purposefully taken to change another actors' beliefs. In contrast, he defines signs as anything in the environment that, once perceived, can change an actors' beliefs.

Cable, 2002), among others,⁵ in reducing apparent information asymmetries (for a more general overview, see Connelly et al., 2011).⁶

In rather noisy signal environments, where the level of information asymmetry between two parties (Spence, 2002) – and thus uncertainty (Gulati and Higgins, 2003) – is highest, individuals might be able to reduce such uncertainty by sending a signal of quality (c.f., Bergh et al., 2014). For instance, hiring procedures, investment decisions, and online dating all occur in such noisy signal environments, where a positive first impression is the key to a candidate's success.⁷ Here, the sender meets his/her signal receiving counterpart, which is already in search of alternative signals approximating the candidate's competence and expertise to corroborate his/her belief that the s/he is qualitatively different, i.e., superior, from those competing in the field (e.g., Perner and Skjolsvik, 2019; Connelly et al., 2011; Spence, 1973). As such, signals in noisy signal environments must “not be directly associated with quality per se but must function as credible indicators of it” (Perner and Skjolsvik, 2019: 354).

It is therefore not surprising that both entrepreneurship and management scholars have increasingly highlighted the importance of symbolic signals of competence (Harrison and Jepsen, 2015) such as media attention (Deepphouse, 2000; Rindova et al., 2005), relationships with high-status actors (e.g., Higgins and Gulati, 2006; Stuart et al., 1999; Podolny, 1994), and third-party affiliations (e.g., Colombo et al., 2019; Migliorati and Vismara, 2014; Plummer et

⁵ There is a variety of potential signals, in particular in the CV (c.f., Spence, 1978), including the degree classification (Heckman et al., 2006b), grades (Protsch and Solga, 2015), and information on further post-degree education/training (Kübler et al., 2019), social volunteering (Heinz and Schumacher, 2017), and early student work experience (Baert and Verhaest, 2019), among others.

⁶ For instance, in his seminal work on signaling theory, Spence (1974) originally investigated such signaling effects in the employee recruitment process. He described how high-quality job candidates differentiate themselves from low-quality candidates by engaging in activities that indicate positive qualifications that are hard to imitate, such as higher education. Since then, the field has undergone a fundamental change in perspective, moving towards exploring the recruiting firm's signals by analyzing the effects of employer activities (for an overview see Uggerslev et al., 2012), such as job advertisements (e.g., Ganesan, 2018), recruiter characteristics (e.g., Chapman et al., 2005), the selection process (e.g., Ployhart and Holtz, 2008), and the company's social media activity (Carpentier et al., 2019) in succeeding on the job market.

⁷ When making an evaluative judgment of an unknown individual, most people will first try to categorize the person based on easily defined attributes and characteristics (Fiske and Neuberg, 1990), that is, they immediately search for initial signals of competence.

al., 2016), which enhances the social status of actors when competing in noisy signal environments.⁸ In many such environments, “causality seems as likely to flow from status to quality as it is to travel in the reverse direction” (Azoulay et al., 2014a: 4).⁹ Surprisingly, however, most previous scholars testing signaling theory have so far refrained from also analyzing the externalities of awards, which is another promising status enhancing signal.¹⁰

In particular, this is true for awards bestowed by legitimate third-party organizations (Baum and Oliver, 1991), which offer a stamp of approval (Lerner, 2002) and legitimacy most relevant to judges, such as potential investors or future employers (cf., Kleinert et al., 2020).

In general, there are two ways in which awards can send signals about the recipient’s quality. First, where information on individual intrinsic qualities, such as ability, passion, and/or team spirit, are important but either unobservable or costly to measure, awards emit a signal conveying an approximation of this information (e.g., Frey and Neckermann, 2010). Second, awards identify the awardee as a member of a group of previous winners of the same award; thus, an indirect signal of quality emerges in the form of inferences on the recipient’s quality, drawn by observing the quality of the group of previous recipients (Frey and Gallus, 2014). In other words, the emerging contextual prestige affects the awardee’s social status as s/he becomes part of an elite group of current and previous awardees.

However, whether or not an award is ultimately an effective signal in a noisy environment depends on the nature of its bestowal (Frey and Gallus, 2017). Here, two different types of awards exist. While confirmatory awards are largely automated reflections of existing information (e.g., performance rankings, including school grades) and, thus, are similar to

⁸ Research in the field of management and entrepreneurship has suggested that as sources of competitive advantage move from tangible towards knowledge-based and intangible resources, it becomes increasingly difficult for clients and investors to evaluate quality and potential economic benefits (Sanders and Boivie, 2004).

⁹ According to Pearce (2011) there is extensive documentation that an actor’s relatively higher social status leads to assumptions by others that the actor is competent and a high performer.

¹⁰ Parsing out the identity-based signaling advantages of status, authors operating in the field of organizational management have recently begun demonstrating that at least some of the benefits enjoyed by high-status actor’s stem from mere perceptions rather than actual differences in quality (e.g., Simcoe and Waguespack, 2011; Azoulay et al., 2014b).

bonuses based on clearly defined, observable performance dimensions, discretionary awards do not rely only on such fixed and upfront communicated criteria, which gives judges more freedom in the selection process and on the decision of upon whom the award is bestowed (Frey and Gallus, 2017). As such, contestants receiving a discretionary award are often surprised, which enhances the signaling effect to the environment, as does the inherent publicity generated through award ceremonies and related media attention (e.g., Frey and Neckermann, 2009, Kovacs and Sharkey, 2014).

It is important to note that it is not only a signal's observability but also its imminent cost – the two determinants of efficacious signals (Connelly et al. 2011) – that tends to be higher for discretionary awards than for confirmatory awards (Frey and Gallus, 2017). For instance, the award's bestower usually increases the signal observability by hosting a public event for the award bestowal, circulating an associated press release, and posting information through social media or a website. Further, both the proud recipients and media outlets add, and thus enhance, the signal's observability through communication channels available to them. It is this publicity, in particular, that makes winning an award bestowed by an independent third-party jury a costly signal, as mimicry, or even fraud, are rather easy to detect (and, thus, difficult to pull off by interested parties).¹¹ As such, trustworthy signals need not be expensive (e.g., higher education) but rather should be hard to fake (Cronk, 2005).

Awards as a catalyst of individual performance

Although there already exist empirical studies exploring the effect of discretionary, third-party awards on their recipient's subsequent performance in the short term,¹² our understanding of whether such awards serve as a career catalyst in early competitive career trajectories is limited

¹¹ Because a referee's reputation might be affected negatively by bad judgement, it is at least likely that judges invest the necessary amount of time to come to an ideal decision.

¹² Henceforth, by using the term award, we refer to discretionary awards bestowed by a third-party organization.

at best. More precisely, while previous research has already established a positive relationship between awards and the success of an individual's work in competitive environments such as in academia (e.g., Chan et al., 2014), entertainment (e.g., Nelson et al., 2001), and fine dining (e.g., Johnson et al., 2005), only a few authors have analyzed the award's impact on the individual's career trajectory, most of which have analyzed individuals in already well-advanced career trajectories; for instance, Nobel Prize winners (e.g., Chan et al., 2015). However, these awardees are certainly different from colleagues beginning their careers, because they no longer rely on signaling their quality to the environment (Kleinert et al., 2018).

Intriguingly, receiving an award on the recipient's career trajectory can ultimately be a double-edged sword. For instance, Levy (1987), highlights the practical and symbolic dimensions of winning the Academy Awards¹³ (perhaps better known as the Oscars), noting two potentially negative effects for awardees. First, in the short-term, the awardee's reputation might be jeopardized if a studio, in an attempt to leverage the Oscar winner's popularity, hastily releases the winner's new film. Second, in the long-term, the winner might face the risk of being increasingly typecast, i.e., if the awardee frequently accepts roles similar to the awarded work. Subsequent work on awards in academia (e.g., Marshall, 2001) and the corporate world (Malmendier and Tate, 2009) largely support Levy's (1987) observation on the heterogeneity of the individual's potential award outcomes. That is, while some Nobel Prize winners experienced increased research funding opportunities, or even used their increased reputation to influence policy decision-making, negative effects include reduced productivity from the distraction of significantly increased publicity (Marshall, 2001). Borjas and Doran (2015) observe a similar productivity decline among Fields Medal Laureates compared to their unawarded contenders.¹⁴ Somewhat similarly, in the corporate world, Malmendier and Tate

¹³ The symbolic dimension of an Oscar winner's career includes the increased prestige that arises from the win. In contrast, the practical dimension refers to the increased power and earnings accompanying an Oscar win.

¹⁴ The Fields Medal is a prize awarded to mathematicians under the age of 40 years. It is perhaps important to note that the career trajectory in mathematics is skewed, with individuals reaching their career height significantly earlier than in other fields.

(2009) conclude that awards presented by the business press, perhaps most notably the Manager of the Year, tend to let award recipients lose sight of their core business, oftentimes at the expense of their employer.

An obvious explanation for this evident post-award productivity loss might be that awardees in those scenarios are well-advanced on their career trajectories – or have even reached their career peak – with comprehensive track records that might make the relevance of sending signals obsolete. However, this is certainly different for individuals in their early career. In this context, Chan et al. (2014), explore the effect of the John Bates Clark Medal, an award bestowed to promising economists in the United States, observing that after five years, awardees had not only published significantly more articles than individuals in a synthetic control group, but their earlier contributions were also cited more frequently that indicates a reputation and signaling effect.

In this manuscript, we follow the previous attempt from Chan et al. (2014) insofar as we explore the (as yet largely ignored) question whether an early career award has a positive effect on an individual's career trajectory. More precisely, we analyze data from German youth football; that is, an environment in which highly motivated young football players at the beginning of their careers compete for only a few seats in the squads of professional football clubs. In this noisy signal environment, it seems at least likely that receiving an award – here the so-called Fritz Walter Medal – emits a strong signal to potential employers that ultimately increases the individual's probability of progressing towards professional sports.

Fritz Walter Medal – A discretionary, third-party award

Below, we analyze the signaling effect of winning an award on the further career success of the awardees in professional youth football in Germany.¹⁵ This setting is highly competitive¹⁶ because only a very small number of candidates will take the last, and probably the most important, step of their still young career as a football player; that is, progressing towards the highest level of the German football league pyramid – Bundesliga.¹⁷ Instead of analyzing the effects of awards for often well-known awardees at an already advanced point of their careers, we examine in this paper the impact of awards before the awardee's professional career – and thus the concomitant life in the spotlight – has begun. As such, by analyzing a very early career stage, we investigate a previously unexplored environment where, first, the objective, comprehensive measures of a player's quality – i.e., his contribution to a team's success – are rather difficult to observe for relevant judges; and, second, sending such signals is critical for youth players because they need to be recognized by club representatives and scouts, becoming classified as potential talent of outstanding quality in a short period of time.

The *Fritz Walter medal* (FWM) honors outstanding German football players between the ages of sixteen and nineteen. Created in 2005, the German Football Association (DFB) awards young talents with a medal in gold, silver, or bronze on a yearly basis. The goal is to both identify and celebrate the best, as well as second and third best player and their achievements, in the respective age groups. As we explain below, several characteristics make

¹⁵ In 2003, the so-called A-Junioren Bundesliga was introduced in Germany in order to increase the performance density in the age groups between 16 years and 19 years.

¹⁶ According to Nippa (2011), two preconditions characterize an organizational setting as competitive: (1) high-ranking owners receive abnormal rents compared to low-status actors, and (2) there is an ongoing struggle for positions among group members. Both preconditions apply to our setting.

¹⁷ Even if a young player, simultaneously investing in both his general and sport specific human capital (c.f., Merkel et al., 2017), is recruited into a Bundesliga club's youth academy, the probability of further progressing to the first team is appreciably low at about 5 percent (Schmidt and Weiss, 2010). Thus, only a small elite circle of exceptional young players ultimately become a professional football player in one of the most prestigious leagues worldwide.

the FWM an interesting source for better understanding the career impact of discretionary awards.

First, the criteria are not solely related to outstanding performance on the field; the judges also evaluate personality related criteria such as leadership potential, team spirit, or a player's behavior as a role model both on and off the pitch (DFB, 2007).¹⁸ Therefore, winning this award is not just a reflection of outstanding physical performance on the pitch over a certain season, but is rather a reflection of an individual's personal development as player and role model, perhaps even maturity, in its entirety. In contrast to most other external awards granted by third parties in the football industry, such as the *man of the match* announcement for the best player after a game or the *top-scorer trophy* handed over to the striker with the most goals scored in a season – both of which are awards that highlight actual past performance – while winning the FWM certainly has a much higher degree of related uncertainty and often comes as a surprise for the awardee.¹⁹ Therefore, the FWM can be considered a discretionary award (Frey and Gallus, 2017).

Second, as explained earlier, an important characteristic significantly influencing the signaling effect of winning an award is the award bestowal itself (Frey and Neckermann, 2010). The announcement of the FWM is usually celebrated during an award ceremony with approximately 150 persons invited, among them primarily family and friends, representatives and coaches of former and current football clubs, as well as representatives from the awarding body DFB. Gallus and Frey (2017) argue that the effects on the awardee and the signaling environment are very strong when the award bestowal is made in public (Kovacs and Sharkey, 2014). Besides the people who have a significant impact on the awardee's careers (e.g., coaches, talent scouts), relevant sports media outlets are also invited, and the association releases an

¹⁸ Apparently, these values are closely connected to the name giver of the award, i.e., former international football player Fritz Walter.

¹⁹ The level of surprise affects the signal strength (Kovacs & Sharkey, 2014; Frey and Gallus, 2016). The greater the level of surprise, the greater the signal effect on relevant judges, because the award is not simply a confirmation of an observable performance hierarchy.

article about the winners on their website. Therefore, the bestowal not only guarantees a general publicity boost for the awardees but it also sends a strong signal of quality and excellence to those operating in the extended football industry.

Third, the FWM represents the highest laurels in the youth football industry in Germany. Neither the football clubs nor association itself offer further awards that are comparable to this particular one with regard to prestige and publicity. Despite the elevated reputation of the FWM, winning the award has no direct financial benefit for the awardee. Although there is prize money connected to the award, the money is not granted to the awardee but is given to the club where the awardee trained before joining a professional youth club. This makes the FWM a purely symbolic discretionary award without any material implications for the awardee.

Data set, empirical strategy and results

We base our analysis on a unique dataset containing information on all 2,405 German players who played for at least one minute in the German Under-19 (U19) Bundesliga during one of the four seasons 2004-05 to 2007-08.²⁰ Established in 2003, and divided into three different (not necessarily geographically balanced) divisions featuring 14 teams each, U19 Bundesliga is the highest level in German U19 football and offers participating players an environment to compete with peers and, thus, attract the attention of professional football teams, i.e., their potential future employers. We chose this particular sample for two reasons. First, by including players who had played U19 Bundesliga football during the season 2004-05, we are sure to include all players that could qualify to earn the FWM, which was awarded for the first time in 2005. Second, by only including players who had played U19 Bundesliga football during the

²⁰ Our initial data set, extracted from transfermarkt.com (a frequently employed German website offering player market value estimates, among other information), contained a total of 4,834 individual players; however, 1,457 of these appeared multiple times. Therefore, we excluded those entries from our data set using the excel function to remove duplicates. Because we measure a player's career success through several dependent variables (including a player's career peak market value and whether he appeared in either the Germany national Under-21 (U21) football team or even the Germany national football (DFB) team), we first excluded 893 foreign players. Further, we also excluded those 79 players with missing information on their overall U19 Bundesliga performance.

four seasons 2004-05 to 2007-08, we make sure that we can fairly assess a player's subsequent career performance.

Intriguingly, at the end of the season 2017-18 – i.e., at least ten seasons since a player's U19 Bundesliga appearance – a total of 199 out of these 2,405 German U19 Bundesliga players (about 8.27 percent) had become a Bundesliga player, while 99 of them made an appearance in the German national U21 football team, and 32 even made it to the DFB team. However, it is important to note that these developmental steps are not necessarily dependent on each other; thus, a player can have made his debut in Germany national U21 football without having played in a Bundesliga team earlier. Similarly, a player might debut for the DFB team without having been nominated for the U21 squad before; for example, in our data set, the latter is true for Christian Träsch.

- - - *Insert Table1 about here* - - -

In Table 1, we first provide summary descriptive information on a subset of 833 players for which we were able to collect complete data on potential explanatory variables, including a player's height, preferred foot, date of birth, and, probably more importantly, his historical U19 Bundesliga performance. Among these players, about 21.86 percent made a Bundesliga appearance in their subsequent career, while roughly 10.99 and 3.62 percent of them debuted for the Germany U21 and the DFB team, respectively. Slightly fewer, only 29 players, or about 3.28 percent of those players in this subset, were awarded with the FWM. Intriguingly, when employing a simple proportions test, we already note that these awardees were more likely to progress to Bundesliga ($M = 0.83$, $SD = 0.38$) than unrecognized players ($M = 0.20$, $SD = 0.40$), $z = 8.069$, $p < .001$ (two-tailed). Similarly, we observe more U21 (69% versus 9%, $p < .001$) and DFB (34.5% versus 2.58%, $p < .001$) team appearances among FWM awardees. Surprisingly, only one player in our subset, i.e., Marko Marin, was awarded the FWM twice.²¹

²¹ Marko Marin received the FWM in both gold (U18) and silver (U17). In our analysis, we consider the former/latter while exploring the award rank/age role in predicting future career success.

To explore the predictive power of the FWM on future career success in more detail, we estimate seven binary probit models. In our first specification, using our original data set of 2,405 players, we explore the main effect of the award in predicting a future Bundesliga appearance. Here, our first dependent variable, BUNDESLIGA, takes the value of 1 if a player appeared in Germany's primary football competition and a value of 0 otherwise. In our second specification, we then add information on both a player's historic U19 Bundesliga performance as captured by previous employment (i.e., playoff appearances, number of games played, and minutes played per game in the U19 Bundesliga) and his divisional membership. In our third specification, using our subset of 833 players, we repeat the previous specification, primarily to allow for a better comparison of effect sizes between the original dataset and the subset. In our fourth specification, again using the subset, we then add more detailed information on a player's position, his preferred foot, height, U-19 debut age, as well as migration background, which might complicate career advancement. We then alter our dependent variable in our fifth and sixth specification, exploring the award's predictive power towards future U21 and DFB team appearances. Finally, in our seventh and last specification, using Ordinary Least squares we also explore the role of having earned a FWM in predicting peak career market value.

- - - Insert Table 2 about here - - -

In Table 2, we present our initial empirical results. Intriguingly, echoing our preliminary results above, we observe a robust effect of being awarded the FWM, irrespective of which dependent variable we model, and which additional controls we integrate; i.e., awardees were more likely to achieve future career success. For example, as can be seen from specification (1), being awarded a FWM – a clear signal of outstanding talent at the early stage of a player's career – significantly increases the predicted probability (by 72.6 percentage points) of progressing towards Bundesliga. While controlling for historic U19 Bundesliga performance and other player characteristics reduces the FWM estimate, the effect sizes remain economically significant and are substantial (for example, the marginal effect of FWM in

specification (4) equals 0.456, which translates to a 45.6 percentage points higher probability of Medalists playing in the Bundesliga compared to others). Furthermore, FWM players are 29.4 and 12.2 percentage points more likely to make it to the U21 and DFB team in their subsequent career, respectively, and their market value at peak career is about eight million Euro higher.

While the effect of the number of U19 game appearances is not statistically significant across specifications (in fact, it is negatively associated with the probability of getting into U21), minutes per game positively and robustly predict Bundesliga, U21, and DFB entry and higher peak career market value. For instance, an extra 15-minute play time in each U19 game leads to a 8.3 percentage points higher probability of being promoted to Bundesliga (specification 4). On a related note, we also observe a robust positive effect of U19 Bundesliga play-off participation, the competitive environment (i.e., the respective youth league), and a player's debut age. For instance, if a player enters U19 Bundesliga six months younger, the likelihood of him progressing towards the Bundesliga later on increases by 4.5 percentage points, increasing also a debut at both the U21 and the DFB team. Also, debut age seems to be a reliable predictor of a player's future maximum market value. In contrast, factors such as a player's height, migration background, and position seem not to have any signaling power regarding his future career success; although, relative to midfielders, strikers are more likely to join the Bundesliga, U21, and the DFB team. We also find that players with specialized feet are more likely to enter the Bundesliga and the DFB team (but not U21) than ambidextrous footballers (i.e., no preferred playing foot).

One obvious criticism of the above analysis is the non-random selection issue of FWM players, as they possess unique characteristics – different from other (although elite) U19 players – that contribute to their exceling in the subsequent career track. We therefore also examine the FWM effects estimated in the probit models with the propensity score matching (PSM) method. To estimate the FWM effect, the PSM estimates the propensity scores using a

probit model, i.e., the probability of undergoing the treatment (being selected as FWM awardees), to control for differences in the player characteristics between those who received the award and those who did not. We estimate the propensity score model by including all control variables included in specification (4) in Table 2. During the matching phase, we impose a caliper of 1, 5, and 10 percent maximum distance between the predicted probabilities of choosing the treatment between matched observations, which resulted in successful match of 97.4%, 99.4% and 99.8% across the whole sample and 86.2%, 96.6%, and 96.6% among the FWM players, respectively. Using the propensity score matched sample (5 percent caliper), we did not find any statistical difference in any of the characteristics control variables used for the matching. This demonstrates the effectiveness of the propensity score model in forming a balanced sample of players with and without the FWM award. In Table 3, we present the estimates of the average treatment effect on the treated (ATET) obtained from the propensity score matching models based on the different threshold of caliper. We find that the FWM effects are highly comparable to those obtained from the probit regressions (Table 2 specifications (4) to (7)). For example, based on 1% caliper distance, the treatment effect of obtaining the FWM leads to about 44, 32, and 28 percentage points higher probability of entering Bundesliga, U21, and DFB team, correspondingly, and additional peak career market value of 6.5 million. The ATETs are also relatively stable with respect to the caliper threshold chosen. Thus, despite the non-random award assignment, our earlier results based on the probit model are somewhat justifiable.

--- Insert Tables 4 and 5 about here ---

A natural follow-up question is whether specific award characteristics amplify the signal emanating from it; that is, whether it matters that the FWM was awarded in bronze, silver, or even gold, and also at which career stage the award was received. To address this question, we present probit regression results in Tables 4 and 5, with an alternative explanatory variable capturing the award rank and the associated cohort, respectively. Intriguingly, as can be seen

from Table 5, we observe that all players awarded a gold FWM progressed towards Bundesliga. Also, when compared to those players without the honor, they were more likely to make their debut at both the U21 and the DFB team, but not necessarily to reach a significantly higher maximum market value. Somewhat similarly, we observe a positive and significant effect of being awarded both bronze and silver on future career success; although the effect size seems to correspond to the award rank, it is not statistically significantly different between gold, silver, and bronze. In contrast, as can be seen from Table 5, we observe only modest differences of the potential role of the career stage at which the player received an award. Thus, while receiving an award seems, per se, to be a robust positive signal for a player's future career success, both the award characteristics and the exact date of the bestowal only add limited explanatory power. Nevertheless, due to the small number of players in each award rank and year cluster, the statistical significance obtained in the analysis presented in Table 4 and 5 should be interpreted with caution, particularly as we do not find statistical difference among the Medalists across award rank and timing.

Conclusions

In this manuscript, we explore data from a full youth football player cohort to better understand the effect of early career awards in shaping individual career trajectories. In sum, we observe a positive effect of receiving an early career award on the awardee's career trajectory. This is interesting, because most previous research primarily focuses on awards bestowed at a later career stage (e.g., Malmendier and Tate, 2009; Chan et al., 2014; 2015), and has largely found heterogenous effects on the individual's career trajectory in the short term, perhaps because these individuals were less dependent on sending strong signals to their career environment. In contrast, we observe that youth footballers, competing for only a few scarce spaces in professional squads, are significantly more likely to progress in their career once they have received an award. Thus, in this context, an award seems to be a strong signal of future career

success, while both the award characteristics, as well as the exact moment in the individual's career trajectory are largely negligible. In other words, for youth players earning an award, being on the winner's podium emits a strong signal, while being in first place rather than second or third is not necessarily better; that is, if all three winners are published.

While we believe this is an important contribution to the emerging award literature, our study is not without limitations. For instance, although we explore data from an entire cohort of young male football players competing in a job tournament, we are currently unaware of whether our results are robust for both alternative settings in different cultures and, perhaps even more interesting, across gender. In particular, the latter offers an interesting path for future research on the effects of awards.

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TABLES

Table 1 **Descriptive statistics of explanatory variables**

		M	SD
FRITZ WALTER MEDAL ¹	Player was awarded a Fritz Walter medal in gold, silver or bronze (Yes = 1; 0)	0.032	0.178
GAMES	Number of appearances in the U19 Bundesliga	32.131	13.371
MINUTES	Number of minutes played in the U19 Bundesliga	2,432.153	1,156.896
PLAYOFFS ¹	Player appeared in the U19 Bundesliga (Yes = 1; 0)	0.190	0.392
LEAGUE			
West	Player has primarily appeared in U19 Bundesliga West (Yes = 1; 0)	0.286	0.452
South/Southeast	Player has primarily appeared in U19 Bundesliga South/Southeast (Yes = 1; 0)	0.370	0.483
AGE at debut	Age at U19 Bundesliga debut (in years)	17.269	0.589
FEET			
Left foot	Player prefers left foot (Yes = 1; 0)	0.186	0.390
Right foot	Player prefers right foot (Yes = 1; 0)	0.559	0.496
HEIGHT	Height of player (in meters)	1.830	0.062
MIGRATION ¹	Player was born abroad (Yes = 1; 0)	0.062	0.241
POSITION			
Defender	Player is a defender (Yes = 1; 0)	0.326	0.469
Midfielder	Player is a midfielder (Yes = 1; 0)	0.385	0.486
Striker	Player is a striker (Yes = 1; 0)	0.166	0.372

Abbreviations and notes: Former Under-19 (U19) Bundesliga players (N = 883); ¹ Dummy variable; References: FEET (Both equal), LEAGUE (North/Northeast), POSITION (Goalkeeper);

Table 2 Fritz Walter Medal as an early signal of future career success

Dependent variable:	PROBIT						OLS
	Bundesliga ¹				U21 ¹	DFB ¹	Market value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
FRITZ WALTER MEDAL ¹	2.29*** (.264)	2.02*** (.319)	1.62*** (.318)	1.44*** (.323)	1.28*** (.312)	1.11** (.347)	8,109* (3,387)
GAMES	.726	.0156*** (.00289)	.00658† (.00388)	.00179 (.00466)	-.0139* (.00595)	-.0112 (.00825)	-27.1 (20.2)
MINUTES PER GAME		.00191 (.00343)	.0017 (.00406)	.000433 (.00506)	-.00189 (.00752)	-.000616 (.0111)	
PLAYOFFS ¹		.0175*** (.00214)	.0173*** (.00446)	.0229*** (.00555)	.0411*** (.00559)	.0246* (.00135)	35.5* (14.3)
LEAGUE		.693*** (.115)	.495*** (.126)	.451*** (.129)	.841*** (.147)	.444* (.227)	1925* (769)
West		.117	.144	.121	.148	.0285	
South/Southeast		.215* (.102)	.355** (.126)	.43** (.131)	.595*** (.171)	.635* (.281)	934* (419)
AGE at debut		.026	.0936	.106	.078	.0272	
FEET		.149 (.104)	.146 (.123)	.187 (.127)	.435** (.167)	.73** (.251)	1015* (408)
Left foot		.0172	.0355	.0423	.0522	.0339	
Right foot				-.369*** (.0968)	-.432*** (.119)	-.551** (.175)	-1070** (411)
HEIGHT				-.0894	-.0589	-.0302	
MIGRATION ¹				.62*** (.171)	.375† (.218)	1.4*** (.421)	759 (506)
POSITION				.143 (.142)	.0516 (.177)	.0531 (.396)	
Goalkeeper				.477*** (.104)	.191 (.239)	1.15** (.034)	720 (478)
Defender				.455 (.954)	-.719 (1.23)	-.914 (1.65)	5042† (2938)
Striker				.11 (.259)	-.0978 (.299)	-.0501 (.353)	-636* (308)
N	2405	2405	883	883	883	883	883
R ²							0.135
Mean VIF							1.73
McFadden's R ²	0.068	0.203	0.121	0.174	0.276	0.305	
Observations correctly classified	92.5%	92.5%	80.2%	81.3%	90.9%	96.0%	
Wald χ^2	75.436	152.151	73.676	113.897	120.440	56.816	
BIC'	-85.502	-231.387	-71.420	-66.237	-74.059	11.129	

Abbreviations and notes: All figures rounded. Robust standard errors are in parentheses; Marginal effects are in italics; †, *, ** and *** represent statistical significance at the 10% ($p < .1$), 5% ($p < .05$), 1% ($p < .01$) and .01% ($p < .001$) levels, respectively. Germany national football team (DFB), Germany national under-21 football team (U21), Ordinary least squares regression (OLS), Binary probit regression (PROBIT); ¹ Dummy variable; References: FEET (Both equal), LEAGUE (North/Northeast), POSITION (Midfielder).

Table 3 Average treatment effect on the treated (ATET) from propensity score matching

Dependent variable:	Bundesliga	U21	DFB	Market Value
	(1)	(2)	(3)	(4)
1% caliper distance				
ATET ($n = 860$)	.44*** (.0532)	.32** (.114)	.28* (.12)	6,514* (3,270)
5% caliper distance				
ATET ($n = 878$)	.25* (.109)	.286** (.11)	.286*** (.0854)	6,996† (3,932)
10% caliper distance				
ATET ($n = 881$)	.393*** (.094)	.357* (.15)	.25** (.0962)	7,608* (3,803)

Abbreviations and notes: Robust standard errors are in parentheses; *, ** and *** represent statistical significance at the 5% ($p < .05$), 1% ($p < .01$) and .01% ($p < .001$) levels, respectively.

Table 4 Award characteristics (rank) as an early signal of future career success

Dependent variable:	PROBIT						OLS
	Bundesliga ¹				U21 ¹	DFB ¹	Market value
	(1b)	(2b)	(3b)	(4b)	(5b)	(6b)	(7b)
...was not awarded	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
...was awarded in bronze	1.7*** (.403)	1.19* (.479)	.887† (.492)	.7 (.492)	1.29* (.593)	.965† (.581)	6,944 (5,209)
...was awarded in silver	.526 (.454)	.262 (.499)	.291 (.48)	.207 (.489)	.297 (.442)	.0969 (.562)	.967† (4,565)
...was awarded in gold	.726 (.454)	.548 (.499)	.539 (.48)	.447 (.489)	.196 (.442)	.0973 (.562)	13,028† (7,106)
N	2395	2395	873	873	883	883	883
R ²							0.147
Mean VIF							1.32
McFadden's R ²	0.037	0.180	0.100	0.153	0.279	0.307	
Observations correctly classified	92.4%	92.5%	80.2%	81.0%	90.9%	96.1%	
Wald χ^2	43.014	152.393	70.509	107.606	118.584	61.401	
BIC'	-33.971	-183.978	-41.835	-35.511	-62.023	24.116	

Abbreviations and notes: All figures rounded. Controls as indicated in Table 2. Robust standard errors are in parentheses; Marginal effects are in italics; †, *, ** and *** represent statistical significance at the 10% ($p < .1$), 5% ($p < .05$), 1% ($p < .01$) and .01% ($p < .001$) levels, respectively. ¹ Dummy variable; ² Because the FWM award rank "gold" predicts future success perfectly, a total of ten 10 observations dropped; Germany national football team (DFB), Germany national under-21 football team (U21), Ordinary least squares regression (OLS), Binary probit Regression (PROBIT); Reference (Ref.)

Table 5 Award characteristics (age) as an early signal of future career success

Dependent variable:	PROBIT						OLS
	Bundesliga ¹				U21 ¹	DFB ¹	Market value
	(1c)	(2c)	(1c)	(2c)	(1c)	(2c)	(1c)
...was not awarded	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
...was awarded in U17	2.12*** (.483)	2.12** (.684)	1.83* (.789)	1.77* (.729)	1.68* (.681)	.686 (.808)	3,280 (3,293)
	<i>.676</i>	<i>.572</i>	<i>.602</i>	<i>.551</i>	<i>.42</i>	<i>.0568</i>	
...was awarded in U18	2.36*** (.442)	2.13*** (.454)	1.64*** (.451)	1.48*** (.427)	1.01* (.412)	.868† (.516)	7,367 (6,609)
	<i>.744</i>	<i>.575</i>	<i>.551</i>	<i>.47</i>	<i>.212</i>	<i>.0812</i>	
...was awarded in U19	2.36*** (.442)	1.82*** (.493)	1.44** (.465)	1.19* (.489)	1.29** (.494)	1.49** (.476)	11,736* (5,270)
	<i>.744</i>	<i>.472</i>	<i>.489</i>	<i>.376</i>	<i>.297</i>	<i>.201</i>	
N	2405	2405	883	883	883	883	883
R ²							0.145
Mean VIF							1.32
McFadden's R ²	0.068	0.203	0.121	0.175	0.278	0.311	
Observations correctly classified	92.5%	92.5%	80.2%	81.4%	90.8%	96.1%	
Wald χ^2	75.084	163.897	78.464	121.485	123.946	71.449	
BIC'	-70.096	-216.137	-58.166	-53.293	-61.426	22.945	

Abbreviations and notes: All figures rounded. Controls as indicated in Table 2. Robust standard errors are in parentheses; Marginal effects are in italics; †, *, ** and *** represent statistical significance at the 10% ($p < .1$), 5% ($p < .05$), 1% ($p < .01$) and .01% ($p < .001$) levels, respectively. ¹ Dummy variable; Germany national football team (DFB), Germany national under-21 football team (U21), Ordinary least squares regression (OLS), Binary probit Regression (PROBIT); Reference (Ref.)